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THE

AMERICAN JOURNAL

OF THE

MEDICAL SCIENCES.

VOL. XXV.

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TO READERS AND CORRESPONDENTS.

The following works have been received:—

Narrative of the Discoveries of Sir Charles Bell in the Nervous System. By Alexander Shaw, Assistant Surgeon to the Middlesex Hospital. London: Longman & Co., 1839. (From the author.)

A Treatise on the Eye. Containing discoveries of the causes of near and far sightedness, and of the affections of the Retina, with remarks on the use of Medicines as substitutes for Spectacles. By Wm. Clay Wallace, Oculist. Second edition. New York: Samuel Colman, 1839. (From the author.)

De Parasitis in Ore. Diss. Inaug. Med. Auctor G. J. Sachse. Heidelberg, 1832. (From Dr. Schenck, of Columbus, Ohio.)

Diseases of the Uterus, a series of Clinical Lectures delivered at the Hospital la Pitié, by M. Lisfranc and edited by H. Pauly, M. D. Translated from the French by G. Henry Lodge, M. D., Fellow of the Massachusetts Medical Society, &c. Boston: 1839. (From Translator.)

Observations on the Typhoid Fever of New England. Read at the annual meeting of the Massachusetts Medical Society, May 29, 1839. By Enoch Hale, M. D., Attending Physician to the Massachusetts General Hospital. Boston: 1839. (From the author.)

Medical and Topographical Observations upon the Mediterranean; and upon Portugal, Spain, and other countries. By G. R. B. Horner, M. D., U. S. N., Surgeon to the U. S. Naval Asylum, &c. With engravings. Philadelphia: Haswell, Barrington and Haswell, 1839. (From the publishers.)

Principles of the Theory and Practice of Medicine. By Marshall Hall, M. D., F. R. S., &c. &c. First American edition, revised and much enlarged, by Jacob Bigelow, M. D., Prof. Mat. Med. in Harvard University, Lecturer on Clinical Medicine in the Massachusetts Gen. Hospital, and Oliver Holmes, M. D., Prof. Anat. in Dartmouth College. Boston: Charles C. Little and James Brown, 1839. (From the Editors.)

Plates of the Arteries, with references, for the use of Medical Students. By Paul B. Goddard, M. D., Demonstrator of Anatomy in the University, &c. &c. Philadelphia, J. G. Aüner, 1839. (From the publisher.)

Human Physiology for the use of Elementary Schools. By Charles A. Lee, M. D., late Prof. of Mat. Med. and Med. Jurisp. in the University of the city of New York. Second edition. New York, 1839.

A Treatise on the Diseases of Infants, founded on recent Clinical observations and investigations in Pathological Anatomy, made at the Hospice des Enfans-Trouvés: with a dissertation on the viability of the Child, by C. M. Billard, M. D. P., with notes by Dr. Olivier, of Angers. Translated from the third French edition, with an Appendix by James Stewart, M. D. New York: George Adlard, 1839. (From the publisher.)

The Dispensary of the United States of America. By G. B. Wood, M. D., Prof. Mat. Med. and Pharm. in Univ. of Penna., and Franklin Bache, M. D., Prof. of Chemistry in the Philadelphia College of Pharmacy. Fourth edition, enlarged and carefully revised. Philadelphia: Grigg and Elliott, 1839. (From the authors.)

The Annual Circular of the Washington University of Baltimore. Medical Department. July, 1839. Baltimore: 1839. (From the Faculty.)

Animal Mechanism and Physiology; being a plain and familiar exposition of the Structure and Functions of the Human System. Designed for the use of schools. By JOHN H. GRISCOM, M. D., Prof. of Chem. in the New York College of Pharmacy, and Lecturer on Animal Mechanism and Physiology. Illustrated by numerous wood cuts by BUTLER. New York: Harper and Brothers, 1839. (From the author.)

Introductory Lecture before the Albany Medical College, delivered October 1, 1839. By GUNNING S. BEDFORD, M. D. of New York, Prof. of Obstetric Medicine. Published at the request of the Class. Albany: 1839. (From the author.)

New Remedies: The method of preparing and administering them; their effects on the healthy and diseased economy, &c. By ROBLEY DUNGLISON, M. D. &c. &c. &c. Philadelphia: Lea and Blanchard. (From the publishers.)

The Edinburgh Medical and Surgical Journal for July, 1839. (In exchange.)

The Medico-Chirurgical Review for July, 1839. (In exchange.)

The British and Foreign Medical Review for July, 1839. (In exchange.)

The London Medical Gazette for June, July, and August, 1839. (In exchange.)

Zeitschrift für die gesammte Medicin, &c. Herausgegeben von J. C. G. FRICKE und F. W. OPPENHEIM. April, May, June, and July, 1839. (In exchange.)

The Transylvania Journal of Medicine and the Associate Sciences for January, February, and March, 1839. (In exchange.)

The Southern Medical and Surgical Journal, August, 1839. (In exchange.)

The Boston Medical and Surgical Journal, August, September, and October, 1839. (In exchange.)

The Select Medical Library and Eclectic Journal of Medicine for August, September, and October, 1839. (In exchange.)

The American Medical Library and Intelligencer, August, September, and October, 1839. (In exchange.)

The American Journal of Pharmacy, July, 1839. (In exchange.)

The American Journal of Dental Science. Vol. I. Nos. 2 and 3. (In exchange.)

The Medical Examiner for August, September and October, 1839. (In exchange.)

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THE

AMERICAN JOURNAL

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MEDICAL SCIENCES.

ART. I.—*Report of Cases of Diseases of the Eye treated in the Wills Hospital, during the months of April, May and June*, 1839. By GEORGE Fox, M. D., one of the Surgeons to the Institution.

WE propose selecting for this report some of the more interesting cases of diseases of the eye, which came under care during our service in April, May and June, 1839.

Amaurosis.—Of this form of blindness seven cases presented, four of which are still under treatment, one was discharged cured, one relieved, and one incurable.

CASE I. Susan Smith, ætat. 23, seamstress, entered the house on the 6th of April, with amaurosis of both eyes. She had been an inmate of the Magdalen Asylum, about three years, and states that her vision which has always been imperfect, became much worse during her residence there, and is still failing; she has been constantly occupied with her needle, usually on fine work; under the impression that she was near sighted, has for some time past worn concave glasses; she has fair florid complexion, light hair, light blue irides which are sluggish; pupils clear black, slightly dilated; three images of a flame visible; amaurotic stare; general health good; catamenia regular; suffers pain in eyes after sewing, not at other times; slight fulness of forehead and eyes; she is much annoyed by flashes of light and bright spots before her eyes; she cannot distinguish the furniture in a room unless within a few feet of it; vision worse at night, or in the dark.

She is directed to be purged with senna tea every third day, to take a shower bath every morning, and use mustard pediluvia every night—diet to be restricted to vegetables, tea, and bread.

12*th.* Two moxas to be applied to each temple.

15*th.* Slightly improved.

22*d.* Improving—can distinguish the leather strap of a trunk on the opposite side of the room, but not the brass nails in the trunk. Continue treatment.

26*th.* Moxas to left temple.

29*th.* Can distinguish the nails of her trunk across the room—no comparative difference of vision in either eye; pupils contract and dilate better.

May 4*th.* Moxas to right temple.

9*th.* Moxas to left temple.

14*th.* Has improved much; pupils natural.

17*th.* Moxas to right temple.

29*th.* Treatment has been regularly continued, and she is now discharged cured. Previous to leaving the house, her vision was tested by my colleague, Dr. Hays, (who, in consequence of my indisposition, had kindly attended to my duties at the hospital, for some weeks.) She then read promptly for him in a diamond print Bible, and appeared to have perfect vision.

P. S. We have since been informed, that, upon her discharge from the hospital, she went to service as cook in a private family and that her sight again became imperfect, but not so much so as to oblige her to apply for re-admission.

Remarks.—We considered that in this case loss of vision was most probably dependent upon an asthenic condition of the retina, with some local congestion; the treatment was directed accordingly, and was speedily successful.

The followiug case of a more aggravated character, presented some similarity. It occurred during the year previous. As it was highly interesting and also treated successfully, we have thought proper to introduce it here.

Case II. Harvey Rue, ætat. 19, apprentice to a watchmaker, entered the hospital, April 4th, 1838, with amaurosis of both eyes; he has a dark florid complexion; dark hair; irides hazel, permanently dilated, no contractile power; pupil black; amaurotic stare. In July, 1837, he first noticed a dimness of vision of the left eye and the appearance as if there was a spot over the sight, which prevented his seeing an object by looking directly at it; by looking obliquely, he could see it, but not distinctly. After a few weeks the sight of that eye was so defective, that he could not distinguish any object with it; he, however, continued at his trade until the following September, when he noticed that the right eye was also failing; he then ceased work, and applied to a medical gentleman of this city, under whose care he continued some months without receiving any benefit; at this time he is almost totally blind, not being able to see a chair in a room, or to walk in the streets alone; he states that at night or when in a dark room, he is constantly troubled with flashes of a bright red light, and the appearance, as of animals of

every shape and description. He has no pain in the head or eyes; light sense of fulness of forehead with preternatural heat; tongue furred; appetite irregular; bowels rather constipated.

He is directed to take a three grain blue pill every evening: a purgative of senna tea every other morning; and to use a mustard foot bath every evening at bed time; milk and vegetable diet.

5*th.* Forty leeches to be applied to the temples, and over the brows.

8*th.* A small blister to each temple.

13*th.* Slight febrile excitement; pulse full and hard; bled him ℥xvj.

14*th.* Relieved by the bleeding. Is directed to take a shower bath every morning.

23*d.* Slight improvement in the appearanee of the eyes; pupils less dilated; sight the same; thinks there is less dimness immediately after taking the shower bath; tongue cleaner; appetite poor; feels very weak; directed the senna tea to be omitted; blue pill to be taken every other night; to take a wineglassful of the following, four times a day: ℞. rad. valerian. cont.; flor. anth. nob. āā ℥j.; cort. aurant. cont. ʒij. To be infused in a quart of boiling water.

Diet; in addition to milk and vegetables, to have one egg daily, and mutton broth at dinner.

May 2*d.* Some improvement; objects appear less dim and confused; iris of left eye more active, less dilatation; is directed to use occasionally, during the day, an errhine containing one part turpeth mineral to eight of powdered liquorice.

16*th.* Sight of left eye decidedly improved; pupil contracts and dilates well; less dilatation of right iris; no improvement in the vision of this eye; with the left eye can now see an object by looking straight at it; cannot distinguish the features of an individual; says he is no longer troubled with flashes of light or spectral illusions; the errhine which was last directed was soon discontinued; in other respects, no change in the treatment; directed forty leeches to be applied to the temples and over the brows, and the sixteenth of a grain of strychnine three times a day.

30*th.* Strychnine to be omitted, there being an increase of fulness of the forehead; forty leeches to be applied to the temples and over the brows.

July 1*st.* Left eye is so much improved he is able to read the large letters at the head of a newspaper; the treatment has been continued; leeches are applied every ten days; bowels regulated by an occasional purgative.

15*th.* General health better; appetite good; very rapid improvement of left eye since last date; can now read fine print; thinks that in the last few days the mist before the right eye has diminished; cannot yet distinguish an object with it. Continue treatment.

August 16*th.* Eyes look well; amaurotic stare has gone; pupils active; sight of left eye nearly perfect; right improving fast; still slight mist, which

appears much thinner; directed valerian tea and blue mass to be discontinued; to take a teaspoonful of the following solution three times a day: ℞. sulph. quininæ, gr. xxiv; tr. acid. sulph. gtt. x; syr. simp., aq. cinnam. āā. ℥iss. M. ft. sol. To continue shower and foot baths daily.

October 16*th.* Vision nearly perfect; still a slight mist before the right eye, which is gradually disappearing; general health good; discontinue all treatment except the shower bath; house diet.

November 21*st.* Discharged cured.

July 22*d*, 1839. Since his discharge from the hospital, he has occasionally visited me; his sight continues perfectly good; the slight mist which he complained of before the right eye has long since disappeared.

Case III. Michael M'Conville, ætat. 48, weaver, entered the hospital April 14th, 1838, with amaurosis of both eyes; he states that about two years since, he suddenly lost the sight of the right eye, and soon after, the left. The right eye has been operated upon for cataract, three times, without any benefit resulting; he has florid complexion; gray hair; iris of right eye greenish yellow, no contractile power, pupil moderately dilated; slight opacity as if from a portion of the capsule of the lens; vision totally gone; iris of the left eye bluish; slight contractility; pupil dilated, of a grayish appearance; slight vision with this eye; thinks at times he can distinguish objects; oftentimes much better than the test of an examination proves. Discharged incurable, April 17th, 1839.

Remarks.—This patient being exceedingly anxious for restoration of vision, and willing to submit to any plan of treatment, which promised the slightest prospects of relief, almost every means were resorted to, and had a fair trial during his long residence in the house, without the least benefit resulting. His eyes were frequently examined catoptrically, but one image of the flame was visible in the right eye, (the lens having been absorbed subsequently to the operations to which he has been subjected); in the left eye, three images of the flame were distinctly visible. A few days previous to his discharge, he was examined by our colleague, Dr. Hays, and the resident physician, Mr. Neill, with the same result. The impression on the minds of all my colleagues, was, that he had always laboured under amaurosis without cataract; the appearance of the left eye was such as might readily deceive in making a diagnosis, until subjected to Sanson's test. We are induced to make this report of his case, as an evidence of the value of this method of examination.

P. S. We learn that he has since been admitted into another institution, and a fourth time subjected to an operation for cataract in the right eye.

Case IV. Mary Bishop, ætat. 20, segar maker, entered the hospital February 9th, 1839, with amaurosis of both eyes. She states that about one year since, upon her recovery from an attack of fever, which was

attended with severe cerebral disease, she was perfectly blind, not being able to tell day from night; this blindness continued about four months; she then improved slightly, and has continued to do so until within a few months; she suffered from cerebral disease once before, and upon her recovery had double vision for some months. At the time of her admission in the house, she was able to read the heading of a newspaper, but could not distinguish an object unless very near. She is a brunette, with black hair, irides dark-hazel, sluggish, pupils clear black, moderately dilated, face full and flushed, almost of a purple hue, short thick person, catamenia irregular. About five months after her recovery from fever, she passed her menstrual period, and has had but two returns since; after their last appearance, her health and sight improved.

April 2d. Treatment since her admission has been directed chiefly with a view to the return of her catamenia, with occasional blisters to the temples; she can now see small letters separately, but cannot read a whole word; complains of fulness of the head without any pain. Ordered venesection, ad deliq. animi; to be actively purged with senna tea; mustard foot bath every evening; vegetable diet.

5*th.* To be cupped to back of neck and temples ℥vj.; every third night to take mass. hydrarg. gr. iij., to be followed in the morning by senna tea.

6*th.* Fifty leeches to be applied to temples and over brows.

10*th.* Shower bath every morning.

14*th.* No change in sight, nor diminution of fulness of head. Blisters to be again applied to temples.

19*th.* Repeat blisters to temples.

23*d.* Fifty leeches to temples and over brows.

29*th.* Considerable improvement the last week; head relieved by last leeching; can distinguish distant objects much better.

May 7th. Menstrual period has passed without any discharge, face full and purple; sight improving slowly; more contractility of pupil.

13*th.* Dr. Hays who was attending in my place directed a blister to be applied to the sacrum, and one to each temple; the following pills to be taken every alternate night until after menstrual period: ℞. pulv. rhei, gr. x; G. aloe gr. ij; mass. hydrarg. gr. vj; M. ft. pilul. No. iv; inability to distinguish colours was noticed by Dr. Hays, who will communicate his observations on this subject, either in the present or a future No. of this Journal.

26*th.* Repeat blister to sacrum.

27*th.* As this is the period for her menstrual discharge, she is directed in addition to the mustard pediluvia at night, to have mustard plasters applied to her breasts and the inside of the thighs—the mustard to be diluted with an equal quantity of flour.

29*th.* Catamenia appeared to-day copiously; vision improved.

30*th.* Discharge ceased; re-apply mustard plasters.

June 1*st.* Face less flushed; feels much relieved; can see any single letter, however small, but cannot read a word of more than three letters, regaining power of distinguishing colours; pupils less dilated. Continue shower bath, mustard pediluvia and an occasional purgative.

11*th.* Heaviness of head; ordered sixty leeches to the temples, and over the brows.

14*th.* Great relief from leeching; can see the eye of a needle, and point of a thread, but not both at the same time.

24*th.* Cups to the sacrum, mustard plasters to the breasts and inner part of the thighs.

26*th.* Blister to the sacrum.

27*th.* Catamenia returned.

Remarks.—This case presents many points of great interest, and we trust a continuance of the report will be made by our colleague, Dr. Littell, who had subsequently charge of the patient. There had been a very decided improvement of vision during our term of service; the relief experienced after the return of her menstrual discharge was very great; her sight was on both occasions much better.

Chronic Conjunctivitis with Granular Lids.—A number of cases of this affection came under care; many of them had been in the house a long time. In the two following cases, the improvement was more rapid than usual.

Case V. *Chronic Conjunctivitis—Opacity of the Cornea—Nebula—Granular Lids.*—Caspar Hampshire, ætat. 45, glass-blower, entered the hospital, March 8th, 1839, with this disease affecting both eyes. He states that they became affected in July, 1838, which he attributes to cold, taken when sailing on the river; he was for some time a patient in the Pennsylvania Hospital, and was discharged without receiving any benefit. At the time of his admission, the whole of the conjunctiva was much thickened and inflamed, that over the cornea so opaque that the pupil and colour of the iris could not be seen, vessels carrying red blood traversing it in all directions; granulations in upper lids very large. Dr. Parrish, during whose service he was admitted, removed portions of the conjunctiva from the upper circumference of the cornea, and applied red precipitate ointment at night; under this treatment he has much improved.

April 2*d.* Applied solid nitrate of silver to conjunctiva of upper eye-lids; directed the free use of mucilage of Medul. sassaf.

4*th.* Reapplied nitr. argenti to upper eye-lids.

8*th.* Much soreness followed the application of the caustic, this has now subsided; granulations diminished; to-day removed a portion of the conjunctiva of left eye.

9*th.* Sight better; great soreness.

11*th.* Reapplied nitr. argenti.

12*th.* Much pain and inflammation; cornea more opaque; vessels running over it are more numerous, directed a blister to the arm to be kept discharging, and the following solution to be dropt in eye three times a day. ℞. sulph. cupri, gr. iij; aquæ, ℥j; M. ft. sol.

15*th.* Divided in each eye, several vessels running to cornea.

18*th.* Great inflammation of right eye; very little sight; vessels over cornea very visible.

20*th.* Omit sol. sulph. cupri; applied solid sulph. cupri to granulations, these are smaller and more flabby.

23*d.* Some improvement; again applied solid sulph. cupri.

24*th.* Sight better; cornea clearer; fewer red vessels; apply solid sulph. cupri to-morrow.

30*th.* Sulph. cupri is applied every other day; granulations diminishing, though still large; less opacity of cornea; red vessels not so numerous; right eye is improving rapidly.

May 9*th.* The sulph. cupri has been applied regularly; the granulations of right eye-lid more prominent than those of the left; opacity of the cornea of the right eye general, but not dense; the lower portion of the cornea of left eye quite clear; sight continues to improve.

10*th.* Discontinue sulph. cupri; liquor plumbi subacet. to be dropt in right eye.

12*th.* Eye more inflamed; discontinue liquor plumbi.

13*th.* Applied solid sulph. cupri; seton in back of neck.

15*th.* ℞. nitr. argenti gr. ij. aquæ ℥ij; to be dropt in eyes twice daily.

17*th.* Eyes worse, extremely irritable; discontinued sol. nitr. argenti; directed him to hold his face with the eye-lids separated, in a saturated solution of common salt in water.

20*th.* Irritability of eyes somewhat abated by the salt water bath: ℞. hydrarg. cum creta, gr. xxv; sulph. quininæ gr. x; M. pulv. No. x. S. One to be taken three times a day.

24*th.* Gums sore; discontinue powders.

25*th.* Applied sulph. cupri, to be repeated every other day.

27*th.* Gastric uneasiness; heaviness of head; directed him to be purged actively with senna tea.

31*st.* General health improved; eyes again better; they do not, however, improve as fast as before using the sol. nitr. argenti.

June 5*th.* Sight better than at any time since admission; again try liquor plumbi subacet. every second or third night.

15*th.* Has not improved since last date; discontinue liq. plumbi subacet., and apply solid sulph. cupri every other day.

24*th.* Has again improved rapidly; corneæ are nearly clear; cloudiness very slight; few red vessels; the granulations nearly gone; discontinue all treatment, use nothing but cold water.

29*th.* Continued well until to-day, when he was to have been discharged; from some unknown cause there is great inflammation, redness, and pain of right eye; cornea opaque; conjunctiva full of red vessels; applied sulph. cupri, and cold mucilage; to be purged freely.

July 1*st.* Right eye still inflamed; this appears to be diminishing; think he will soon be sufficiently well to leave the house.

P. S. This patient continued in the house until September 21, when he was discharged cured; cornea clear; no redness of conjunctiva.

Remarks. Nothing afforded so much relief, as the application of solid sulph. cupri to the granulations; this article in solution, nitr. argenti solid, and in solution and liq. plumbi subacet., were invariably followed by much soreness, pain, and increase of redness of conjunctiva, (excepting upon the two first applications of the solid nitr. argenti, after which, although much pain followed, the granulations rapidly diminished,) we were several times induced to try these articles, and always after regretted having done so.

Case VI. *Chronic Conjunctivitis—Vascular Cornea—Granular Lids.* James Glenn, ætat. 45, farmer, entered the house, May 25th, 1839. The disease commenced in March. The cornea of the right eye is opaque; opposite pupil clearer; granulations of upper lid few; none very large, and but little redness of the conjunctiva; on the upper part of the cornea of the left eye which is nebulous, there is an ulcer, with red vessels running to it; granulations of the upper lid large and very red; with this eye there is great intolerance of light and lachrymation; can scarcely separate his lids.

27*th.* Cups to the temples; apply solid sulph. cupri to the upper lids.

29*th.* ℞. hydrarg. cum, creta, gr. iss; sulph. quininæ gr. j. M. ft. pulv. three times a day. ℞. sub. corrosive, gr. j; aquæ ℥vj. M. ft. sol. Use as a collyrium.

31*st.* Headache; eyes improved; discontinue powders; to be purged actively with senna tea.

June 3*d.* Purgative to be repeated; mustard pediluvia every night.

8*th.* Much improved; lids scarified; use mucilage, and omit sol. sub. corrosiv.

11*th.* Pain and heat in the head; cups to be applied to the temples and back of the neck.

12*th.* Applied solid sulph. cupri to the granulations.

13*th.* The sight much better; left eye wide open; ulcer of cornea is much smaller; still some heat in the head; to be cupped to the back of the neck.

24*th.* Ulcer has healed, leaving a large, but not dense opacity; opacity of right eye is diminishing; granulations in each are all removed; sight good; use nothing but cold water.

29*th.* Lids redder; granulations again visible.

July 1*st.* Eyes look well; sight almost perfect; is considered well, and would now be discharged, but as his residence is distant from the city, we think it better he should remain some weeks longer.

P. S. Was soon after discharged cured.

Strumous Opthalmia.—When we consider the prevalence of a scrofulous diathesis among the lower class of our population, combined with the ordinary causes which tend to its development, as exposure to the damp, the use of improper food, &c., we shall not be surprised at the numerous cases of this affection, brought to the hospital for relief. Frequently one half of the whole number of patients in the house are labouring under this disease, and many others visit it at stated times for advice. It too frequently happens either from the ignorance of the parents, their inability to procure proper advice, or the great difficulty in making the requisite applications to their children's eyes, that most of the cases which present are of a highly aggravated character; there is no class of ophthalmic diseases in which the liability to relapse is so great, and none in which the benefit of judicious treatment is so evident and prompt.

Case VII. *Ulcers of the Cornea—Conjunctival redness, &c.*—Hannah M'Michael, ætat. 3, entered the house April 15th, 1839, with both eyes affected. She has been suffering some months; intolerance of light is so great that it is almost impossible to get a good view of the cornea; the left eye seems the worse; there are several ulcers visible on each; slight conjunctival inflammation; lids swollen; abdomen tumid; tongue slightly furred; ℞. calomel ppt. gr. iij; pulv. rad. rhei, ℈ss. M. ft.; pulv. to be given every third night. ℞. nitr. argenti. gr. j; aquæ ℥j. M. ft. sol.; to be dropped in the eyes morning and evening; milk diet.

18*th.* Lids less swollen; opens her eyes better.

20*th.* Has taken cold; eyes not so well.

22*d.* Less intolerance of light.

24*th.* Ulcers of the left cornea touched with solid nitr. argenti.

27*th.* Much better; nitr. argenti again applied to the ulcers.

29*th.* Worse; increased redness of lids, and intolerance of light.

May 2*d.* Inflammation of conjunctiva has subsided; opens her eyes well, and bears a light room; ulcers healing.

12*th.* Blister to be applied to back of neck.

13*th.* ℞. pulv. rhei; test. ostreæ ppt. āā, gr.vj. at night. Ware's red precipitate ointment to be applied to edge of eyelids every evening.

24*th.* Much better; ulcers of left cornea filling up; still rough.

26*th.* Relapse; re-apply blister to back of neck.

31*st.* Again improving.

June 2*d.* No inflammation or intolerance of light; ulcer smoother.

5*th.* Discharged, cured, with slight opacity of each cornea.

P. S. This child was seen in July; she remained well; the opacity was fast disappearing.

Case VIII. *Ulcers of Cornea—Nebula, &c.*—Ellen M'Gee, ætat. $3\frac{1}{2}$ years, entered the house, May 11th, 1839; she has been much neglected by her parents; both eyes are affected, corneæ nebulous and ulcerated; eyelids swollen, inflamed, and suppurating; eruptions behind ears; great intolerance of light; she is directed to have a warm bath; to be well washed; to take this evening, calomel gr.iij; pulv. rad. rhei gr.vj. after to-night. ℞. sup. tart. potassæ, lac sulphuris āā ʒss. a teaspoonful every night, mixed in molasses; milk diet.

17*th.* ℞. iodini ℈j; hydriod. potassæ ℈ij; aquæ ʒvij. S. Two drops three times a day.

20*th.* Much improved.

24*th.* Less intolerance of light, both corneæ slightly opaque.

27*th.* Ware's red precipitate ointment to be applied to eyelids every evening.

June 5*th.* Nearly well.

13*th.* No inflammation or intolerance of light; lids look well; cornea clear.

15*th.* Discharged cured.

Case IX. *Ulcers of Cornea—Intolerance of Light, &c.*—Rebecca Curran, ætat. 7, entered the house, June 1st, with both eyes affected; her eyelids are swollen; tightly closed; cannot bear a ray of light; she wears a thick handkerchief over them, and hangs her head on her bosom to avoid the glare; the intolerance of light is so great, it is impossible to make a satisfactory examination; left eye seems the worse; directed the handkerchief to be taken off and to be confined to a dark room; to be purged with senna tea, and have dropt into eyes morning and evening, a solution of nitr. argenti, (gr.j. to ʒj.)

5*th.* Right eye more open; slight ulceration of cornea; left still closed; no appearance of ulceration of the cornea of this eye. ℞. calomel, ppt. gr.ij: pulv. rad. rhei gr.vj. M. ft. pulv.; to be taken every third night.

11*th.* Improving; can open left eye; blister to be applied to back of neck. ℞. iodini ℈j; hydria potassæ ℈ij; aquæ ʒvij. M. ft. sol. S. Two drops three times a day.

14*th.* Very little intolerance of light; much improved.

21*st.* Discharged cured; eyes strong and of healthy appearance.

Case X. *Ophthalmia Tarsi.*—Sarah J. Mullen, ætat. 7, entered the house, May 4th, 1839; the eye-lids are red, swollen, scabby, and suppurating; no lashes; directed a warm bath this evening, ℞. calomel, gr.iij; pulv.

rad. rhei, ℈ss. S. At bed time. ℞. iodini. gr.v; hydriod. potass. ℈ss: cerat. simp. ℥ss. M. ft. ung. S. Apply to edge of eyelids morning and evening.

9*th.* Much improved; no scabs or matter; lids still red and swollen; eyelashes appearing.

17*th.* Discontinue iodine ointment, and use at night, Ware's red precipitate ointment: ℞. pulv. rad. rhei; test. ostear, ppt. āā gr. vj, at night.

24*th.* Eyelids less red and swollen, smooth and clean.

June 2*d.* Still improving.

5*th.* Not quite so well; more inflammation of lids.

10*th.* Nearly well again.

12*th.* Discharged cured; lids were free from redness and swelling; lashes numerous.

Art. II.—*Cases of Injuries of the Head with Observations.* By T. S. Kirkbride, M. D.

Case I. *Compression of the Brain from large Effusion of Blood—Rupture of the Middle Artery of the Dura Mater, without Fracture of the Skull—Death.*—A. C. M., ætat. 18, while engaged at his occupation as a carpenter, fell from the third story of a house on the 15th of June, 1833. He alighted directly upon his head, in a fire-place, in which were small pieces of brick. He was rendered completely insensible by the fall and was brought to the Pennsylvania Hospital, forty minutes after the occurrence of the accident. At that time his skin was warm—pulse full and strong—his face flushed—pupils dilated—breathing stertorous—several small incisions existed in the scalp, produced by the rough bodies upon which he had fallen, but no evidence of fracture or depression in any part of the cranium. A vein was opened in the arm, and until twelve ounces of blood were drawn, no change took place in the pulse; it then began to sink and the aperture was immediately closed. He died thirty minutes afterwards. The *autopsy* made six hours after death, revealed the cause of the symptoms and sudden death. All the upper portion of the scalp, in which were found the wounds mentioned above, was elevated by the effusion of full half a pint of blood between it and the bone. Beneath the cranium, and between it and the dura mater was found ℥viij. of fluid blood. Under the membranes, in the ventricles, and at the base of the brain was not less than ℥xvj. of effused blood, also in a fluid state. The middle artery of the dura mater was ruptured. Other parts of the body not examined.

Case II. *Compound Fracture of the Skull, with Depression—Recovery, without an Operation.*—Wm. R., ætat. 9, residing in this city, of good

constitution and general health, fell a distance of eight feet, striking the right side of his head upon the edge of an iron furnace; such as is in common use for culinary purposes. The accident occurred about 7 P. M. on the 24th of June, 1836, and I saw him in consultation with Dr. Perrine, one hour afterwards.

His family heard the fall, but as he was supposed to be still playing, no notice was taken of the noise, till he was heard to cry some minutes afterwards. He then was rational and answered questions properly. He vomited the undigested contents of his stomach—complained of the pain of the wound, and resisted strongly while his head was being shaved. His pulse 80, regular, rather quick and weak—pupils natural—he was disposed to dose, but was always roused without difficulty.

On the right side of the head, two inches from the mastoid process, anteriorly and superiorly, was a wound, three-fourths of an inch in extent, from which blood continued to ooze. Upon separating the lips of this wound, a portion of denuded bone was observed, and a fissure with depression of a fragment of bone on its lower side. With the finger, this depressed portion was readily traced, it was one inch and three quarters long and nearly as wide;—the depression at the fissure, was of the thickness of the bone, and at the other edge was on a level with the surface of the cranium. A small wound also existed near the lower edge of the fragment, but it did not penetrate to the bone. As there were no symptoms whatever denoting compression of the brain, it was determined to resort to a rigorously antiphlogistic treatment and not to operate, at least, until the occurrence of other indications for that course.

Directed venesection ℥vj.; Purge with calomel; ice water to the head; absolute diet; to lie in bed with the head elevated.

25*th*, *Morning*.—Patient slept at intervals during the night, had no vomiting since last report; complains of soreness of the wound and some headache; tongue moist, slightly furred; pupils natural; head and skin generally warmer than natural; pulse 80, soft, rather quick; medicine has not operated. Repeat the purge and give a stimulating enema.

Evening.—Bowels purged twice; pulse 85, other symptoms as in the morning. Repeat the purge and give tart. antim. in nauseating doses.

26*th*. Medicine produced vomiting; his bowels are freely open; less heat of the skin; his pulse is 80; no cerebral symptoms; his tongue moist, and pupils perfectly natnral. Treatment continued.

28*th*. Yesterday the patient had more pain around the wound and twenty leeches were applied above the ear, and on the temple of the injured side with marked relief. To-day his countenance is animated, and his symptoms altogether favorable. His bowels are kept freely open. Tart. antim. given in small doses, and a rigid diet still continued.

July 4th. Patient is out of bed, makes no complaint; sleeps well, and the wound of the scalp is healing.

11*th*. Wound healed. No uneasiness in the head, or tenderness on pressing the injured part. The depression is very evident, in the want of the natural contour of that part of the head. His diet is still low, and he is occasionally purged.

November 1*st*. Saw the patient's father a day or two since, who stated that his son had continued perfectly well, and had never suffered any inconvenience from the injury.

Case III. *Violent Concussion of the Brain, with Indications of Injury at its base—Recovery.*—Lewis T., ætat. 6 years, enjoying good health, of remarkably fine appearance, and with large cerebral development, fell about 8 P. M., on the 12th of July, 1838, a distance of five or six feet, striking his head upon a block of wood, lying in a cellar. He was rendered insensible by the fall, but spoke some minutes afterwards. He was bled twenty minutes after the accident to the extent of eight or nine ounces; after which he appeared prostrated—vomited, and had a convulsion.

I saw him just before 9 o'clock;—there was contusion and swelling over the left parietal protuberance—but no wound of the scalp, nor could any fracture or depression of bone, be detected. His pulse was feeble, 100; skin cool and pallid; his pupils were somewhat dilated; he had bleeding from the ear and nose; swallowed drink, and although he did not speak, appeared to recognise his father, when addressed by him. During my visit, he vomited his undigested supper, mixed with blood, and soon after had a violent convulsion. His extremities were rigid, and spasmodic action of the eye-lids and mouth continued for several minutes. His respiration at one time appeared almost stertorous, and the pupils of his eyes were, for a period, noticed to be strongly contracted. A stimulating enema was given—sinapisms applied over the stomach and on the legs, with heat to the extremities, and ice to his head.

11 P. M. Patient slept soundly since last visit, but appeared sensible when the cold was applied to the head, although he has not spoken. Pulse 100, quick, with more strength; skin warm; pupils contracted; no vomiting or convulsions since last report. ℞. Calomel gr. vj; Mist. neutral. with antim. tartrat. Ice continued to head.

13*th*. Patient slept most of the night, but started frequently—he could be roused, and vomited several times after drinking. The medicine has not operated on his bowels. His skin is warm, tongue moist, slightly furred; pulse 90; pupils natural. Ordered stimulating enema; the ice and antimonial mixture to be continued.

14*th*. His bowels have been freely purged, and he has improved decidedly since last report; he converses and is interested in what is passing around him. He still has some irritability of stomach; scarce any fever; no headache.

15*th*. Patient asks to walk out of his room. He has no fever, headache, or unpleasant symptoms of any kind. He was directed to be kept perfectly quiet, on a low diet, and to be purged frequently.

21*st*. As last reported. Treatment continued.

May, 1839. After last report the patient recovered rapidly. I have recently visited him for a trifling indisposition, and learned that he has enjoyed perfect health since his recovery from the accident detailed above.

Case IV. *Fracture of the Skull—Recovery without bad Symptoms.* John N., ætat. 14, passing under the scaffolding of a house on the 19th of September, 1836, was struck by a brick which fell from the third story, directly upon the top of the head, producing a wound two inches in length, through which was discovered a fracture of the skull easily traced by the probe or fingers for three-fourths of an inch, but with scarce any depression. A careful examination detected no other injury.

I saw him a few minutes after the accident—he was then recovering his sensibility, and complained of severe headache. His pulse was quick and weaker than natural. After he was taken home, he lost ℥xij. of blood from the arm, and was freely purged with calomel. Kept at perfect rest and upon low diet with cold applications to the head. Simple dressing applied to the wound.

20*th*. Patient passed a restless night and has some fever this morning; his pupils are natural; less headache than yesterday. Solution of tart. antim. in nauseating doses.

21*st*. Doing well; no increase of excitement. Repeat mercurial purge and continue other treatment.

24*th*. Wound of scalp is healing; he has no headache; sleeps well at night. He is kept perfectly quiet and the treatment rigidly persevered in.

From this date the patient continued to do well; the wound healed; he gradually commenced taking exercise, and soon returned to his business in one of our most extensive cutlery establishments. When I last heard from him he had suffered no inconvenience of any kind from the accident.

Case V. *Compound Fracture of the Skull, with loss of Cerebral Substance—Rationality for several days—Death from Phrenitis.*—John H., ætat. 28, a labourer, was admitted into the hospital on the 16th of January, 1837, at 3 P. M. At 11 o'clock the same morning, he had received a kick from a horse upon the frontal bone immediately above the right eye. He was stunned for a short time—had considerable hemorrhage, but no vomiting. Upon his admission his skin was cold and pulse feeble; he was rational, spoke of the occurrence of the accident, and noticed remarks made upon the severity of the injury. Small pieces of bone were removed through the opening of the scalp, which was nearly two inches in extent, and through this a much larger portion of bone appeared to have

escaped before he reached the hospital; portions of cerebral substance had passed through the torn dura mater, and the finger could be introduced without difficulty into the cerebrum. The eye of the injured side could not be seen from the great effusion which prevented its being opened; the pupil of the opposite side was natural; there was no distortion of the features, nor paralysis of the extremities.

17*th.* Patient slept some during the night; continues perfectly rational; pulse 60; skin of the natural temperature; respiration 20; pupil not contracted; bowels freely open from medicine; face a little flushed; he has headache.

18*th.* Symptoms as last reported.

19*th.* Restless during the night; anxious to walk about the ward, and to remove the poultice from his head, but is calm this morning, and recollects perfectly what has been done for him since he entered the hospital; pulse 65, quicker than heretofore.

20*th.* More restless; tossing about the bed; pulse quick, 90; face flushed; skin hot and dry; tongue covered with a whitish fur, and inclined to dryness; the pupil of the left eye is natural, but the expression is changed; pain in the head more severe.

21*st.* Very restless during the night and delirious; pulse 120, quick and feeble; skin cool, inclined to moisture; respiration 40; sanious discharge from the wound; pupils slightly dilated; no paralysis.

23*d.* Since last report the patient has been gradually sinking, and died at 8 o'clock in the evening.

The *treatment* in this case was strictly antiphlogistic; venesection was resorted to several times to as great an extent as could be borne: cups and leeches were used, and ice applied to the head. He was freely purged, and took a solution of tart. antimonii. Poultices were applied to the wound.

Autopsy, fifteen hours after death. Exterior.—Rigidity of the extremities. *Head.*—A wound two inches in extent over the right eye, through which the finger could be passed into softened cerebral substance; effused blood beneath the scalp in the neighbourhood of the wound; the eye uninjured. The orbitar plate of the frontal bone broken up, and portions of it still upon or imbedded in the brain; the ethmoid, and the wing of the sphenoid also fractured; the zygomatic process of the temporal bone broken and loose. Two openings, admitting the finger, existed in the dura mater, and a fragment of bone three-fourths of an inch long was found nearly one inch from the surface of the cerebrum; four other pieces of nearly the same size were also found in the substance of the brain or immediately upon it at some distance from the softened portion. On the *right* side, both surfaces of the arachnoid were covered with a tenacious pus, so as to completely hide their proper surface. This coating extended to the posterior part of the cerebrum. No pus in the ventricles, which contained two ounces of fluid.

The brain, at the seat of the injury, two and a half inches in extent, by one and a half in depth, was softened so as to form a bloody pultaceous mass. The pia mater injected; scarce more than the usual quantity of red points in other portions of the cerebrum. On the left side the membranes and substance of the brain were nearly normal in their appearance. Other parts not examined.

Case VI. *Fracture of the Skull without Depression—Compression of the Brain from Effused Blood—Paralysis—Death.* C. S., ætat. 45, a millwright, was admitted into the hospital at 8 P. M. on the 12th day of December, 1836. About noon the preceding day he received a severe blow from a police officer, who was attempting to arrest him. He fell upon the curb stone, striking the left side of his head, just above and a little posterior to the ear, at which point the scalp was torn about two inches in extent. No fracture could be detected, and the finger, passed for some distance beneath the scalp at the seat of external injury, showed the pericranium entire. He was stunned by the blow or the fall upon the curb stone, and up to the time of his admission had remained nearly insensible. When he came to the house, he could be roused with great difficulty, and then only gave answers respecting his head. He had no vomiting. On moving the right arm, some resistance was noticed, none in the left. He had been bled previous to his entering the house, and ℥vj. additional were taken after his admission, which was all he could bear. Sinapisms were applied, and stimulating enemata given; cold kept upon the head, and he took a solution of tart. antim.

13*th*. Patient's mouth is drawn to the right side, and he is unable to raise the left eye lid; he has not moved the left arm since last evening; has some power in the leg of that side, and controls the rectum and bladder. He is roused with difficulty, and has the blowing respiration often noticed in apoplexy, and produced by paralysis of the muscles about the mouth; his lips and teeth are covered with mucous; pupils slightly contracted; some sensibility to light; respiration 28; pulse 88, regular, but weak; face flushed; skin warm and moist.

14*th*. Respiration of the same character as last reported; pulse 80; pupils contracted; face flushed; has no power over the left side of his body, but manifests some sensibility when it is sharply pinched, though much less than on the right; less distortion of the face; passes his urine involuntarily. In addition to the other treatment, a blister was applied to the back of the neck.

15*th*. Six ounces of blood taken from the arm last night, again produced sinking of the pulse. He is decidedly worse to-day; his pulse 144, and very quick; skin very hot and dry except in the face; respiration 48, puffing; teeth and lips covered with sordes; eyes injected and have a cloudy

appearance—pupils contracted and show some sensibility of the retina, after being covered by the hand for a minute or two; cannot be roused; involuntary discharges of urine; perfect paralysis of left side.

16*th.* Continued gradually to sink, and died about 12 at night.

Autopsy, 13 hours after death.

Exterior, fine muscular development; rigidity, less of left arm than of right; wound of scalp as above mentioned. *Head.*—Considerable effusion under the scalp, but no laceration of the pericranium; a fracture, however, was discovered before removing the skull cap, which, at a subsequent stage of the dissection, was found to commence just below the left parietal protuberance, extending forwards and downwards till it reached the middle fossa of the base of the cranium, thence down it, and along the wing of the sphenoid—inwards to the edge of the sella turcica—forwards to the crista galli and from that point to its termination in the right middle fossa, its whole extent being between seven and eight inches. There was no depression of bone and scarce any separation of the sides of the fissure. No effusion between the cranium and dura mater, although they were more easily separated than usual, particularly in the right middle fossa.

Upon the *left* side, there was considerable congestion, cloudiness of the arachnoid, and the pia mater injected. Upon removing the dura mater of the *right* side, the whole of that hemisphere was found covered with a stratum of black coagulated blood; this coagulum extended down towards the base of the brain, and under and alongside of the middle lobe of the cerebrum it was an inch in thickness; the brain under this coagulum was dark and reduced to a pulp. The softened portion, three inches by one and a half, was three-fourths of an inch deep in the centre, gradually diminishing towards the margins; the brain elsewhere was of good consistence but more dotted than usual; pia mater injected and some cloudiness of the arachnoid. The ventricles of both sides contained about ℥iij. of slightly turbid fluid. Cerebellum engorged with blood, but no effusion; central parts of good consistence. Viscera of thorax and abdomen examined and found perfectly normal.

Case VII. *Note of a Case in which Epilepsy occurred after the use of the Trephine for Compound Fracture of the Skull.*—R. B., ætat. 45, came under observation, with an injury of the shoulder joint presenting several points of interest, but a note of his case is presented here only as connected with injuries of the head.

He had resided in the State of Ohio for a long period, and fourteen years since was injured by a tree falling upon him and fracturing his skull so severely, that he underwent the operation of trephining, and had a number of pieces of bone removed, one of which was one and a half inches by three-fourths of an inch in extent. This space is filled up by ligament, and there

exists a depression so striking as to arrest attention, upon the most careless examination of his head. He recovered from the operation in a few weeks, but since that time has been subject to epileptic fits, although his health in other respects is good. The fits recur at irregular intervals, but come on with great certainty after an unusual indulgence in drink; and it was when intoxicated that he met with the accident for which he now required professional assistance.

Observations.—The cases above reported, are extracts from the Note Book of the writer, and a continuation of those published in previous Numbers of this Journal; among which, it may be recollected, several of severe injury of the head were included. The difference of opinion that still exists on some points in the treatment of these accidents, which are certainly among the most important and interesting that command the attention of the surgeon, renders all facts connected therewith, when carefully observed, of value to the profession.

On one point particularly, viz., the use of the trephine, we feel confident that farther facts are required, before the whole profession will place a proper estimate upon it, as a remedial means in the treatment of these injuries. At present, while some surgeons of deserved celebrity almost banish the instrument from practice, others resort to it upon nearly every occasion, and express extravagant confidence in its almost universal efficacy. It is true, a class of cases are met with (compound fracture, with depression of bone, and symptoms of compression, for example,) where the treatment could hardly be varied; but from this point, a diversity of opinion prevails—the difference widening as the severity of the symptoms diminishes.

It is unfortunate that so many practitioners trust to recollection for the result of their practice, and particularly so, in cases where serious operations may be required. A very few cases of unexpected recovery or the result of a single fortunate operation, we fear, are too often made the ground work for sweeping general conclusions, that a more extended experience or more carefully recorded observations could hardly have failed to prove unfounded. Records made during the treatment of cases by intelligent observers, can alone be of much importance in settling doubtful points in medical or surgical practice, and but little value ought to be attached to any other description of evidence. The absence of this kind of information in many of the communications that are to be met with on the subject of injuries of the head, and the use of the trephine, renders them of comparatively little utility to the profession.

Although, as we have before observed, these cases are reported, as a contribution of facts, and with no view of strengthening particular opinions or advocating a favorite plan of treatment—still, we may remark of the trephine, that the large number of cases that have come under our observation in the hospital, and in the private practice of this city, has not

tended to increase our confidence in the utility of the operation in the *doubtful* cases; the post-mortem examination where death has occurred, having almost invariably shown such serious injury at the base of the brain, or such extensive effusion as no operation could have relieved. And on the other hand, the favorable result, without subsequent bad consequences, in cases of decided depression of bone, *without symptoms of compression*, has disposed us to think more favourably of the opinion, that the danger in cases of simple depression of a smooth portion of bone, is much less from the pressure it exerts, than from the injury which the brain received at the time of the accident, or perhaps we might even add, from that which it would receive from the violence which must necessarily be done, by the employment of the trephine, as a means of relief.

Case I, occurred in the hospital during the writer's residence, and is an example of extensive injury and effusion without fracture. The terrible concussion of such a fall could hardly fail to produce fatal effects, and the result was what no mode of treatment could have benefitted. Case II, was a very serious injury without bad symptoms, and although decided depression was evident, the absence of all symptoms of compression of the brain prevented the use of the trephine, and the result has given no cause for regretting the course that was adopted. The third case was much more threatening in appearance; the insensibility—the convulsions—the almost stertorous respiration, and the hemorrhage from the ears and nose, were sufficient to produce fears of very serious injury at the base of the brain. His recovery was more prompt than could have been anticipated. The bleeding, *immediately* after the injury, we considered, to say the least, uncalled for. Case IV suffered only from the concussion; the fracture may not have extended through the inner table of the skull, althongh, in our experience, accidents produced in the same way, have been graver in their character, and often less fortunate in their termination. Case V, a very severe injury, with loss of cerebral substance, and terminating by phrenitis, revealed on the autopsy, all the the usual appearances that were to have been expected under such circumstances. Case VI might have been a very important one, in a medico-legal point of view, had the blow been inflicted by other, than an officer in the execution of his duty. The probability is, however, that the serious mischief was produced by the fall on the curb stone. The case was particularly interesting from the symptoms which were so striking that a perfect verification of the diagnosis was to have been expected from a post mortem examination. With all the violence done to the brain and its envelop, there was little to be discovered upon an external examination; and although the trephine would most likely have been applied in the proper situation, had its employment been deemed advisable, no good could have resulted. These two last cases occurred in the hospital, under the immediate care of our friend, Dr. Wallace, then resident surgeon, to the Institution. The seventh case is noted, as an example of epilepsy following

the use of the trephine, where there was reason to believe all the bone that was depressed, or in any way interfered with the functions of the brain, had been removed. The patient's health had always been good previous to the accident, and although the convulsions did recur at other intervals, yet intemperate drinking never failed to bring on a paroxysm of severity.

Philadelphia, September, 1839.

ARTICLE III. *Report of Cases Treated in the Baltimore Alms-House Hospital.* By SAMUEL ANNAN, M. D., Senior Physician to the Institution.

CASE I.—*Epilepsy—Contraction of the Extremities of the right side.* E. D., ætat. 21, admitted August, 1834, is marked on the overseer's book, "a cripple, and subject to fits." Has a permanent contraction of the flexor muscles of the right arm and leg. The arm is bent at a right angle at the elbow joint, and the fore arm is carried in front of the body. The hand is also very much flexed on the fore arm. The thigh is flexed on the pelvis, and the leg on the thigh, and the foot is turned inwards. In walking the points of the toes touch the ground. Her friends state that this distortion has existed from birth.

Her mind is but little developed. She is simple and inoffensive; but her temper is irritable, and she is easily made angry. For the most part she is quiet and taciturn; answers questions rationally; but on becoming excited, talks rapidly and incoherently, and is soon seized with an epileptic convulsion. The epileptic fit, uniformly follows, and suspends these paroxysms of passion. She had become greatly debilitated and emaciated, when she was attacked with slight symptoms of dysentery, succeeded by diarrhœa, which, in a short time, carried her off.

Exterior.—Emaciation great; limbs straight. *Post mortem* examination twenty-four hours after death. *Brain.*—The os frontis on the left side was found to be one inch thick at its base, becoming thinner towards the coronal suture, where it was nearly normal. The orbital plate of the same was about half an inch thick. The lower part of the parietal bone, the squamous portion of the temporal bone, also the petrous portion, and the base of the skull in front of this latter part were much thicker than natural. The bones of the right side of the skull were normal. On turning off the dura mater, the arachnoid membrane lining it, was seen to be coated with a layer of false membrane, fully one line in thickness, opposite the upper and lateral parts of the anterior and middle lobes of both hemispheres of the cerebrum; which, when stripped off, the arachnoid membrane was observed to be of its natural bluish white colour. On the left side this false membrane was thicker and more completely organised than on the right

side. It was of a dark red colour, from its vessels being filled with blood; but the surface of it, which looked towards the brain, appeared to be lymph not long effused, inasmuch as when scraped off, it was yellow and did not contain blood vessels. It became thinner as it approached the base of the cranium, and could not be traced over the petrous portions of the temporal bones, nor over the orbital plates of the frontal bones. The two surfaces of the arachnoid membrane adhere firmly on both sides of the superior longitudinal sinus, and glandulæ pacchioni were numerous. This membrane was removed entire from the upper and lateral parts of both hemispheres, and on the left side had contracted such a firm adhesion to the cineritious matter, at one or two points, that portions of the convolutions, in a softened state, came away with it. It was opaque, and greatly thickened, and indurated, especially on the left side, and at the part which covered the central margin of the left hemisphere. At the latter place, it was nearly as thick and as strong as the dura mater. On the base of the cerebrum, and likewise on the cerebellum, it was normal. There was some serum effused into the sac of the arachnoid, and also beneath the pia mater. The left hemisphere of the cerebrum was very much diminished in bulk. The surface of the convolutions was of a pale white colour; and these bodies were extremely small and shallow. The medullary centre was greatly reduced in thickness, and was very pale; but the corpus striatum, and thalamus of this side, were about as large as those of the opposite hemisphere; as were also the natis and testis when compared with those alongside of them. The cineritious matter of the right side was perhaps rather paler than natural; but the medullary centre, when cut into, showed a number of turgid vessels and bleeding points. The septum lucidum and fornix were slightly softened. Consistence of other parts normal. The right hemisphere weighed seventeen ounces and six drachms; the left ten ounces and one drachm.

Thorax.—The upper part of the superior lobe of both lungs was tuberculated, and a cavity of considerable size was found in the top of the right lung.

Abdomen.—A few small spots of the pyloric half of the stomach had their mucous coat red and softened, while the greater part of the membrane of this half was thickened and mammillated, and of fully the natural strength. Several small ulcers were found in the ilium; and one patch of Peyer's glands, about three inches long, was denuded of its mucous membrane. There was a long ulcer on the ilio-colic valve, and a number of ulcers, some of them large, were seen in different parts of the colon. They extended no deeper than through the mucous coat. In the kidneys, numerous large red vessels were seen running towards the pelvis of each organ, from the surface of the cortical part.

Remarks.—Atrophy of the brain, varying in extent, from that wherein the hemispheres are entirely wanting, to that wherein some convolutions,

or parts of them, only, are absent, has been frequently seen. In many case the place of the absent cortical and medullary matter has been supplied b serum, and in this way the general outline of the brain has been preserved In this case, the atrophy was owing to an extraordinary thickening an projection inwards, of certain parts of the cranium. It was the left sid only which was atrophied. According to Meckel, the cerebrum generall weighs three pounds, or thirty-six ounces, apothecaries' weight. The righ hemisphere, it has been seen, weighed seventeen ounces and six drachms which would make the whole of the cerebrum, the opposite hemisphere being of the same size, thirty-five and one half ounces.

In the first book of the *Clinique Médicale*, in which M. Andral treats o the diseases of the encephalic membranes, he says that in one case in which permanent flexion of the limbs was observed, he found considerable redness of the pia mater extended over the convexity of the left hemisphere of the brain, with injection of the gray substance of the convolutions of this side. He also quotes the case of a young girl mentioned by Parent and Martinet, who, during the five days previous to her death, presented permanent flexion of the two arms, and on examination, there was found general inflammation of the arachnoid of the convexity; the meninges at the base were thickened, and a small quantity of pus infiltrated them towards the cerebellum; and the ventricles were filled by a turbid serum. In another case, M Andral observed a strong contraction of the flexor muscles of the forearm, and on dissection, there was found effusion of blood between the arachnoid and dura mater with thickening and redness of the former membrane.

In his second book, which treats of diseases of the brain, Andral narrates the following cases of contraction of limbs. 1. Strong flexion of the fingers of the left hand on the palm, and of the forearm on the arm. The substance of the two cerebral hemispheres very much dotted with numerous red points. 2. The fingers of the left hand flexed so as to touch the palm; the forearm also strongly flexed on the arm. Softening of the surfaces of several of the convolutions, and of the substance, on a level with the centrum ovale of Vieussens, of the right hemisphere. 3. Flexion of the left hand and forearm. Softening of the right hemisphere a little below the convolutions, at the junction of the anterior and middle lobes. 4. Flexion of the right hand and forearm. The left optic thalamus and corpus striatum changed into a yellowish soft substance. The nervous substances around them also softened. 5. Alternation of flexion, and simple paralysis of the left hand, forearm, and three or four turns of the leg on the thigh. The posterior and middle lobes, for two-thirds of their extent, changed into a yellowish bouillie. 6. Flexion of both upper and lower extremities of the left side. The entire anterior lobe of the right hemisphere, the corpus striatum and anterior portion of the optic thalamus, changed into a grayish bouillie. 7. Right forearm and fingers flexed. Left arm cataleptic. Thickening and slight opacity of the membranes covering the anterior and middle parts of the cerebral hemis-

pheres. In the left hemisphere, the posterior and middle part of the optic thalamus, presented a portion the size of a hazle-nut, converted into a yellowish bouillie. In the right hemisphere, there was a softening of small extent towards the posterior internal part of the optic thalamus. In the centre of the softening a small quantity of blood infiltrated the nervous pulp. 8. Flexion of right hand and forearm, and also of the right leg on the thigh. Softening anterior to the left corpus striatum, and likewise of the fornix and septum lucidum. Ventricles greatly distended with serum. 9. Flexion of the left upper and lower extremities. Immense softening in the right hemisphere, commencing at the convolutions of the posterior and middle lobes, and extending near to the base of the brain. The optic thalamus and corpus striatum both reduced to a bouillie.

Dr. Adair Crawford in his part of the article "Inflammation of the Brain," in the London Cyclopædia of Practical Medicine, says, that while there is a great resemblance between the symptoms of general cerebritis, and those of arachnitis, he regards a more strongly marked and permanent degree of rigidity in the muscles of one side of the body, as more particularly indicative of cerebritis. The spasmodic rigidity generally shows itself first in the arm, in which it is always greatest, and then extends to the inferior extremity. The rigidity and retraction of the muscles which is sometimes observed in connection with meningitis, he thinks, may be distinguished from what he calls spasmodic paralysis, arising from cerebritis, with softening of the brain, by the following signs, viz; there is no actual paralysis; and when the convulsive retraction intermits, the patient fully recovers the power of voluntary motion in the same manner as after the paroxysms of spasmodic rigidity in tetanus. This convulsive rigidity is scarcely ever limited to one region or to one side of the body, as in partial cerebritis, but affects a variety of parts at the same time on both sides. Another ground of distinction, he thinks is, that the sensibility remains unimpaired. In spasmodic paralysis, the rigidity and loss of voluntary motion are permanent, and the sensibility of the affected parts is more or less obtuse. Admitting it to be true, that spasmodic paralysis is a very common symptom of chronic meningitis, he believes it is equally certain, that if the brain be carefully examined, chronic inflammation of the membranes will almost always be found combined with inflammation, and softening of the surface of the brain.

Dr. Crawford farther informs us, that spasmodic paralysis, with pain and other signs of irritation, is generally characteristic of the *first stage* of cerebritis, or that of excitement; but that when the inflammation advances towards the *second stage*, or that of softening or suppuration, the rigidity or muscular, contraction gradually lessens, until at last there is complete paralysis. An important difference exists, therefore, between the spasmodic and the complete paralysis: the first being the effect merely of the compression and irritation of the cerebral substance occasioned by the great influx of blood in the first stage of inflammation, is capable of being removed, if we can only

succeed in subduing the inflammatory action at an early period; the second, arising from the softening and complete disorganisation of a portion of the cerebral substance is beyond the hope of recovery.

In opposition to some of the above statements, M. Andral informs us, that *permanent* flexion of the forearm on the arm is often observed in meningitis; and I have quoted one of his cases of permanent flexion of the arm, in which no other lesion of the nervous centres was seen, except a bright red injection of their substance. It has also been proved, by the cases quoted from Andral, that permanent flexion or spasmodic paralysis, is often connected with, and no doubt dependent upon, softening of the brain. This is the state, in which, Dr. Crawford says, spasmodic rigidity, or permanent flexion disappears, and complete paralysis ensues. Andral, on the other hand says, that it has been laid down much too generally, that softening of the brain produces, in the greater number of cases, a flexion of the limbs. Observation has satisfied him, that this flexion may be as often absent as it is present; but it is very true, he farther informs us, that when it does occur, it becomes an excellent sign to distinguish a softening of the brain from every other affection of this organ. He immediately, however, cautions us not to regard it as pathognomonic; inasmuch as it has been seen in other cases where there was no softening. This caution was certainly required, after telling us that permanent flexion of the forearm on the arm, is often seen in meningitis, and narrating a case in which no change but a bright red injection of the cerebral substance was observed.

The true state of the case would appear to be, that while permanent contraction of various muscles is most frequently found to be connected with cerebritis and softening of the brain, it may be produced by lesions of other parts of the encephalon, as well as by a different form of lesion of the same part. In the case which I have narrated, it was owing to congenital atrophy of one of the hemispheres of the cerebrum. A large number of cases, of a similar description, has been published in the Archives Générales de Médécine, tom ix, by M. M. Breschet and Cruveilhier.

I may add, that M. Lallemand differs from both Andral and Crawford, and is of opinion, that convulsion and also rigidity of the limbs, is a symptom of inflammation of the coverings of the nervous centre.

Epilepsy is caused by such a variety of morbid conditions of the encephalon, that we cannot be surprised at its existence in the foregoing case. It would, however, be interesting to know, whether the mental emotion, which invariably brought on the epileptic fit, was confined to the hemisphere fully developed. There were arachnitis and cerebral congestion of the right side, to account for it, and these lesions are sufficient to have produced the imbecility of the mind. Was the atrophied left hemisphère incapable of carrying on its share of the mental functions? Is this a case where the phrenological doctrine of double organs may, with propriety, be introduced? It will have been observed that she was not a complete idiot. She answered

rationally when spoken to; and the question is, what would have been the effect upon the mind, if the right hemisphere had been as much atrophied as the left. The phrenologists have not yet graduated the scale of mental weakness, which corresponds with every degree of deficiency in the cerebral development. They prefer treating of generality; and we cannot, therefore, obtain any assistance from them in the present difficulty.

It will not be uninteresting to notice, in this connection, the unstable ground occupied by our phrenological brethren.

The brain, consisting of two hemispheres, the phrenologists regard all the organs as double, and in this view explain the cases of unimpaired mind where one side of the brain is diseased or injured. Mr. Combe tells us, "it will be evident, that before we can expect complete loss of any one faculty, the entire organ of *both* sides must be destroyed; a fact which has been altogether overlooked by the objectors. For it will be seen, upon an attentive examination of the cases quoted, that not a *single instance is recorded in which the destruction of both organs has occurred, while the alleged manifestation existed.*" The triumphant italics are Mr. Combe's. It is on this principle of the duplicity of the organs, that they have uniformly replied, and as they think, unanswerably, to the cases quoted in the 48th No. of the Edinburgh Review, to Dr. Gordon's facts and arguments in the 49th No., and to the cases recorded in the Manchester Memoirs.

Without adverting at present to the cases which disprove the assertion, that the organs of both sides are never diseased, while the alleged manifestation existed, I would merely express my surprise at observing in the August number of the Select Medical Library, the editor of which ranks second only to Dr. Caldwell as a zealous and able advocate of the claims of phrenology, a case quoted from no less an authority than the Edinburgh Phrenological Journal, of impairment of verbal memory; and on examination after death, there were two small cysts found, lodged in a depression in the organ of language of the left side, which seemed to extend from this point of the brain to the ventricle. "The right hemisphere did not exhibit any thing extraordinary."

What are we to say to this? The same individuals who will not suffer us to bring forward a single example of disease or injury of one side of the brain, where the corresponding faculties are not impaired, as evidence against their system, no sooner meet with a case which appears to corroborate their views, although of precisely a similar character, than they seize upon it with avidity, and sing their song of triumph. From their own accounts, there was no disease of the organ of language of the right side; and if the organs are double, and act independently, although in harmony, when in health, how did it happen, that the uninjured organ of the right side did not perform its appropriate mental functions?

But let us examine this case a little further. How did it happen that not

one of the other organs located in the anterior lobe of the cerebrum was affected? "The autopsic examination showed that there was an alteration of the cerebral substance of the left hemisphere, in addition to the two cysts lodged in a depression of the part which rests on the middle of the orbitar plate. The ambiguity of the phraseology will be readily perceived. Did the alteration of the cerebral substance extend over the whole of the left hemisphere, or was it confined to the anterior lobe, where the cysts were found? Let us take the language in its most restricted sense; and then I would ask, an explanation of the fact, that of the sixteen or seventeen organs situated in the front of the skull, but one was observed to have its faculty in the slightest degree disturbed. I take it for granted we shall have the usual reply, "the organs of the opposite side sustained the functions." Admitting this, will you then inform us why the same thing did not occur in relation to the organ of language?

Case II. *Hemiplegia—Insanity.*—R. S. a black woman, age not known, but certainly very old, was admitted, March 30th, 1838. Was extremely feeble, but could walk with a little assistance. Died June 12th, 1839. For several months before her death, she was confined to her bed with hemiplegia of the left side. The palsy was not complete, but she could use the arm and leg in a slight degree. During the two or three weeks immediately preceding her death, there was moderate flexion and rigidity of all the limbs. Her mind was a good deal impaired. She was very noisy, especially at night, and was continually calling the names of two or three persons, supposed to be her daughters. Still when spoken to, her answers were rational; and she never manifested any of the turbulence of acute mania.

Post mortem examination.—Brain alone examined. The arachnoid membrane lining the dura mater, where it lies over the upper and lateral parts of the middle and posterior lobes of both hemispheres, was coated with a false membrane of moderate thickness, which was easily pealed off from the subjacent tissue. The natural colour of this false membrane was brown; but nearly its whole extent was reddened by the extravasation of blood into its substance, forming an ecchymosis. The vessels were no doubt ruptured by the violence employed in breaking the skull with the hammer. In taking out the brain, firm bands of adhesion were separated, by which the anterior parts of the middle lobes of the cerebrum, and also their base, were attached to the arachnoid of the dura mater. The arachnoid where it passed off from the cerebellum to the medulla oblongata was opaque and thickened. The veins of the surface were unusually turgid. The arachnoid covering the hemispheres of the cerebrum was normal. A small quantity of serum was found in the arachnoid sac.

There was softening of the septum lucidum and fornix, and also of the corpora striata and thalami. The right thalamus was covered with a thick layer of brown matter, of a soft consistence. About the middle of its sur-

face, however, there was a more solid portion, somewhat roundish, the centre almost black, and one side of it, of a bright yellow colour. A portion of the softened surface of the thalamus, posteriorly, was removed with the velum interpositum, when it was raised, leaving a superficial excavation. On removing the softened brown surface, and cutting into the thalamus, its whole substance was seen to be of a light brown colour, and much darker than the one of the opposite side. The superficial veins of the lateral ventricles were very turgid with blood; and the same was observed through the medullary substance generally.

Remarks.—The primary disease in this case was undoubtedly the arachnitis. By it the mental functions were disturbed. It is remarkable that the layer covering the cerebral hemispheres, should have been so little affected. The inflammation secondarily extended to the substance of the brain, and attacked principally the thalamus of the right side. Having reached a certain point, hemiplegia of the left side of the body made its appearance; and finally softening having taken place, flexion and rigidity of the limbs ensued. This case may be regarded as supporting the theory of Serres and Foville. The corpora striata and thalamus were hoth softened; and the lower as well as the upper extremity was paralysed. It also, if the series of morbid action was such as I have supposed, sustains the views of Andral, viz., that flexion and rigidity of the limbs are caused by softening of the cerebral substance.

Case III. *Idiocy from a blow on the head.*—E. R. ætat. 25 years, admitted May 16th, died August 1st, 1839. This girl was a prostitute, and on Christmas, 1836, was struck on the right parietal bone with a stick, by one of her paramours, by which she was knocked down, and rendered insensible. She remained in a state of stupor during several hours. For some days she was unable to leave her bed, and she never afterwards had perfect command of her limbs; neither was she able to articulate distinctly, and her intellect was so much impaired, that she was regarded as idiotic. When admitted into the Almshouse, she could walk a few steps with a tottering gait, but was liable to fall forwards, unless she could catch hold of something wherewith to support herself. On attempting to grasp any thing, the motions of the hands and arms were irregular; showing that the muscles were not completely under the command of the will. The motions somewhat resembled those of a person affected with chorea. She appeared to be completely idiotic, and was as easily managed as a child. When she attempted to speak, although with a little attention, a number of words could be distinguished, no coherent sentence could be made out. She was frequently seized with what appeared to be a chill. She became paler; the extremities cold; and she whined and wept, and was restless and uneasy for two or three hours. No marked hot stage, however succeeded. During several weeks before her death, the muscles about the mouth were

in a state of constant motion, except when she was asleep. She was attacked with dysentery, which was succeeded by diarrhœa, of which she died.

Post mortem examination twelve hours after death. *Exterior.*—Emaciation not great. Brain alone examined. Neither the scalp nor the skull showed any trace of a blow having been inflicted. The arachnoid membrane and pia mater, over the entire surface of both hemispheres of the cerebrum, especially on the upper and lateral parts of the anterior and middle lobes, adhered so firmly to the convolutions, that it was with considerable difficulty they could be stripped off. Over the posterior lobes and base of the cerebrum, the adhesion was not so strong. From the anterior and middle lobes, the cineritious matter, in a softened state, came off, adhering to the membranes. The arachnoid was considerably thickened, and was opaque. The thickening and opacity were greatest over the superior parts of the middle lobes. The medullary centre of the cerebrum showed a greater number of red points than is natural, and the superficial veins of the ventricles were distended. Three or four ounces of serum were found in the sac of the arachnoid, and in the ventricles; and there was a small quantity under the pia mater.

Remarks.—This case would appear to countenance the theory of Foville and Pinel Grandchamp, viz: that the cortical substance is the seat of intelligence. The blow upon the head brought on inflammation of the arachnoid, pia mater and cortical substance. Extensive adhesions were formed between the membranes and the surface of the convolutions; and softening of the cortical matter took place. There was extensive disorganisation of the surface of the cerebrum; while the medullary matter was comparatively uninjured. The mind was a complete wreck; but motion, until she became greatly debilitated, was not very much impaired.

Case IV. *Insanity—Diarrhœa.*—M. E., ætat. 50, admitted May 25th, died September 15th, 1839. This woman was a great talker; but all she said was exceedingly incoherent. She was, however, quiet and inoffensive, and gave us no trouble. I could not ascertain the duration of the mental aberration. She was attacked with diarrhœa, lost her appetite, and gradually wasted away.

Post mortem examination twelve hours after death. *Brain.*—The glandulæ pacchioni were numerous along the central margins of both hemispheres of the cerebrum. There were thickening and opacity of the arachnoid membrane on the upper and lateral parts of both hemispheres, and also where this membrane passes from the cerebellum to the medulla oblongata. Its colour was a dirty white. There was a considerable quantity of serum in the sac of the arachnoid, and also in the ventricles. On the base of the cerebrum, and between the hemispheres, above the corpus callosum, the

arachnoid was little if at all changed in structure. When tearing off the arachnoid and pia mater, from the left hemisphere, it was found to adhere firmly to the surface of the convolutions, opposite to the parietal protuberance; and a portion of the cineritious matter, in a softened state, came away with the membranes. At this part, and for some distance around, and also in a few other places of this side, the cineritious matter was either of a deep red colour, or speckled and spotted with red points; and at all these places, it was softened to the consistence of a pulp. There was little or no redness and softening of the cineritious matter of the right side; but the arachnoid was as much thickened, and about as opaque, as that of the left hemisphere. The medullary matter was firm; but, when sliced, showed a great many red points of large size. This was especially the case, opposite the parietal protuberances of both sides, and through the whole of the medullary substance. These red points were rather less numerous on the right side. The large veins of the surface of the cerebrum, as well as those of the lateral ventricles, were turgid with blood. Cerebellum normal.

Thorax.—Nothing particular.

Abdomen.—The inner surface of the stomach was covered with red patches of various sizes; the spaces between which, in the pyloric extremity, were of a light bluish colour. The red spots were softened. The lower part of the ilium and the upper half of the colon were red and softened. The lower half of the colon, and likewise the rectum, had their mucous and muscular coats greatly thickened and indurated; and numerous ulcers of various dimensions, some of them an inch in diameter, were seen penetrating through the thickened mucous coat. All the spots not ulcerated were red and hardened. The liver was of a grayish yellow colour, both on the surface and through its substance. The kidneys were hardened, especially the left one.

Remarks.—Here is another case of mental disturbance, where the principal lesion is found to be in the membranes and cortical substance of the cerebrum. The degree of redness of portions of the cortical substance, was much greater than I have usually seen. Softening unaccompanied by much discoloration is more common. It would seem to be more probable, that the disorganisation of the surfaces caused the mental derangement, than that it was produced by the venous congestion of the medullary substance. There is nothing in these cases to support the phrenological hypothesis. The faculties associated with the parts of the brain most diseased, did not exhibit a corresponding amount of disturbance.

Hypertrophy of the coats of the colon and rectum, especially of the mucous and muscular coats, is frequently met with in our post mortem examinations. In some cases it is accompanied by obstinate constipation; the mucous surface, and also the muscular coat, being indurated and thickened so as to resemble cartilage; and deprived, in a great measure, of their

sensibility. In this state, the most drastic cathartics make little impression. In other cases, where the thickening and hardening are less, and this process appears to be still going on, there is obstinate diarrhœa. There is frequently more or less of ulceration; but, in the worst cases, the ulcers are perfectly indolent.

Case V. *Hemiplegia—Syphilis.*—D. W., ætat. 28, admitted September 21st, 1838. This woman came into the syphilitic ward in a most deplorable state of nakedness and disease. She had palsy of the left side; was unable to turn herself in bed, and could not articulate so as to be understood. Her mouth was drawn to the right side, and she was unable to protrude her tongue. There were erysipelas of the thighs and hips, and ulcers of the genitals. Her fæces and urine were passed in bed. Her previous history was not obtained. She recovered so far as to be able to walk with difficulty, her left leg being dragged along slowly and painfully. The motion of the left arm was very imperfect; and when she protruded her tongue, it was pushed over to the left side, by the action of the genio-hyoglossus muscle of the right side. She did not entirely recover the power of speaking, but muttered and mumbled; and it was with great difficulty, and only by those accustomed to listen to her, that she could be understood. Four or five weeks before her death, she was attacked with dysentery, fever and general prostration; gradually declined, and died August 13th, 1839.

Post mortem examination twelve hours after death. *Brain.*—Three or four ounces of serum were found in the sac of the arachnoid; and this membrane was slightly thickened, and somewhat opaque. On cutting through the centre of the medullary matter of the cerebrum, the middle and anterior lobes of the right hemisphere were found to be perfectly white and solid, resembling very much the white of a hard boiled egg; but as white as it was possible for them to be. Not a single red point was visible. The posterior lobe showed a considerable number of red points; as did also the anterior and posterior lobes of the left hemisphere. The middle lobe of this latter hemisphere was as white as that of the opposite side. Cerebellum normal. When the arachnoid and pia mater were torn off from the tuber annulare, a small opening was observed to the right of the mesial line, from which a thin, light straw-coloured pus exuded. On dividing the tuber longitudinally through this opening, a cavity was seen, of the shape of a pear, the large end being forwards, adjacent to the anterior surface. This cavity was three quarters of an inch long, and half an inch wide. It was lined with a membrane, and its surface was irregular. No part of it lay to the left of the mesial line.

Thorax.—Nothing remarkable.

Abdomen.—The stomach, towards the pyloric extremity, was of a grayish colour. Some spots were red. There was no softening. The colon

and rectum were somewhat reddened, and the mucous coat softened at the red parts. The liver was of a yellowish colour, both externally and internally.

Remarks.—According to the account of her acquaintances, the subject of the above case had been a prostitute and a drunkard. At what time, or or under what circumstances, the palsy supervened, I could not discover. Dr. Todd, of Kings College, London, is disposed to agree with Serres and Foville, in the opinion, that in the generality of cases of hemiplegia, the optic thalami and corpora striata, or some portion of the cerebral hemispheres will present a morbid alteration of structure; which may vary in extent as well as in degree. Andral, from a comparison of seventy-five cases, in which the lesion was circumscribed with sufficient exactness to qualify them for solving this question, has been led to the conclusion, that in the present state of science, we cannot yet assign in the brain, a distinct seat to the motions of the upper and lower extremities. No doubt, he adds, that such distinct seat exists, since each of these extremities may be paralysed separately, but we do not yet know it.

In the above case, the palsy was unquestionably dependent upon the lesion of the tuber annulare. The consolidation and anæmia of the middle and posterior lobes of the right hemisphere, cannot be supposed to have had any agency in the production of the hemiplegia, from the fact that a similar condition of the middle lobe of the left hemisphere, had not affected the motory power of the right extremities. Neither was any alteration of structure observed in the corpora striata and optic thalami. We are thus restricted to the one palpable injury. But this case is not solitary. Andral narrates a case virtually the same. A woman had been paralysed during four years, on the right side. On examination after death from another cause, the only lesion found was a cavity in the middle of the crus cerebri of the left side, capable of containing a cherry, and filled with a greenish serum.

An interesting question is, was the woman whose case I have narrated, attacked with apoplexy at the time the extravasation of blood took place into the tuber annulare? In the case just quoted from Andral, the woman went to bed in her usual health, and on awaking in the morning, found her right side paralytic. Here there was no loss of consciousness. In many other cases, however, where the hemorrhage has had its seat outside of the hemispheres, in the cerebellum, for example, and in the tuber annulare, apoplexy has been observed. Dr. Fabre has recorded the case of an old man, who died of an attack of apoplexy, accompanied with complete loss of consciousness, in whom the nervous centre presented no other lesion than an effusion of blood into the substance of the left corpus pyramidale. The extent of the effusion of blood, would appear to have more influence upon the intelligence, at the time of the apoplectic seizure, than its seat. We

cannot, however, suppose that all the blood which could be effused into one of the corpora pyramidalia, could cause sufficient pressure upon the encephalon to destroy consciousness. It is more than probable, that associated with the extravasation, there was some other morbid condition which was overlooked. In the case of my patient, I imagine there may or may not have been apoplexy, according to the condition of the encephalon at the time. At what time the hardening and anæmic condition of three of the cerebral lobes made its appearance, it is impossible to say. Whether it preceded or succeeded the effusion of blood, cannot be ascertained. Neither can we discover the remote cause. Alcohol hardens the dead brain; but its stimulating properties are more likely to produce congestion, inflammation, and softening of the living organ.

An impairment of the faculty of speech, similar to what was observed in the above case, but sometimes greater, is a frequent occurrence after an effusion of blood into the brain. M. Bouillaud has published a number of cases, from which he thinks he may conclude, that the anterior extremity of each hemisphere, constitutes the organ of speech; this part having been found the seat of lesion in all the instances where speech had been lost during life. Sixteen cases are mentioned by Andral, in which the morbid change resided in one of the anterior lobes, or in both, and speech was retained. On the other hand, he has collected fourteen cases where the speech was abolished, without any alteration in the anterior lobes. M. Lallemand has given a case in which the faculty of speech was completely lost, and no other alteration was found than a softening of the white substance of the left lobe of the cerebellum. In M. Ollivier's work on the spinal cord, there is a case where loss of speech occurred, at first partial, and then complete. The tuber annulare was found softened at its lower surface to an extent equal, at least, to the size of a filbert. This case is very analogous to the one I have given above.

Case VI. *Epilepsy—Insanity.*—E. A. ætat. 59 years, admitted March 13th, 1839, blind.—Her vision had been destroyed by inflammation. It was soon discovered that she was subject to fits. They were brought on by the smallest degree of motion—even by moving her on her bed—and not a day passed that she had not several. During these fits the limbs became rigid, and the left arm and leg were slightly convulsed. Each fit lasted from five to ten minutes. The convulsion was not violent; and there was not any foaming at the mouth. On the disappearance of the fit, she appeared to be very much debilitated. The left arm and leg lay motionless, but she soon recovered command of the muscles. Her mind was greatly impaired. She talked incoherently and incessantly, but was not violent in her manner. Could not ascertain how long she had been in this state.

She was attacked with dysentery; refused to take medicine; and died June 21st, 1839.

Post mortem examination.—The veins of the outer surface of the dura mater were distended with blood; and numerous large glandulæ pacchioni were seen along the course of the superior longitudinal sinus. The arachnoid lining the dura mater was of a pink colour, opposite to the parietal bones. There were about three ounces of serum in the arachnoid sac. The membranes covering the hemispheres were not thickened, and there was scarcely a perceptible opalescence. The colour of the cineritious matter was rather darker than natural. Vascular turgescence was very manifest throughout the whole of the medullary substance. Numerous large red points, and long red vessels, were visible at all places, on cutting and scraping the medullary tissue. The superficial veins of the lateral ventricles were extremely large and filled with blood. The discoloration of the arachnoid lining the dura mater; and also this turgescence of the vessels of the cerebrum, were greater on the left than on the right side. There was considerable vascular congestion throughout the cerebellum. A tumour was found lying on the left crus cerebelli, close to the tuber annulare, of the size of a large shellbark, viz., three-fourths of an inch long, and half an inch broad. It was covered with a serous membrane, and by it was attached to the arachnoid and pia mater of the cerebellum. It was solid, and on being laid open, its colour was seen to be red and yellowish white intermixed. Two spots were harder than the rest, and felt like cartilage. *Thorax.*—Two or three, small, bluish, and thin flakes of false membrane were found attached to the serous membrane covering the heart. There was extensive and old adhesion of the right lung to the ribs.

Abdomen.—An inch of the œsophagus at its termination in the stomach, was of a very dark red colour; two or three spots being of a dark purple, almost a blue colour. Along the lower margin of this red portion, the follicles were greatly enlarged. The mucous membrane of the stomach was of a brownish yellow and bluish gray colour, with spots of ecchymosis and softening. The colon and rectum were extensively ulcerated, reddened and softened. The ulcers were of various sizes; and were especially numerous along the longitudinal bands.

Remarks.—The morbid alterations presented by this case are opposed to the cortical theory of intelligence. The cineritious matter exhibited fewer signs of disease, than the medullary. The meningitis which had existed, had not affected the membranes in contact with the convolutions. The vascular turgescence of the dura mater, and of the medullary substance, was sufficient to account for the epilepsy; but we have not at present, the data to enable us to decide whether the same cause produced the insanity. It is true that vascular injection of the medullary substance, has been frequently observed in the brains of insane persons; the red points being sometimes large, and at others small, according to the size of the vessels congested; and the latter giving rise to a mottled appearance of a deep red or violet colour. We, however, see these changes in so many cases, where no mental aber-

ration exists, that we cannot but hesitate in ascribing insanity to them alone. But there can be no danger in asserting that this disturbance of the equilibrium of the circulation of the brain, forms a part of the morbid condition which develops insanity. Inflammation of the arachnoid covering the hemisphere, with or without adhesion to the cortical substance, has been the most frequent and evident morbid alteration, in my post-mortem examinations of the insane. How far the cortical substance may be deranged in function, in the cases where there is no perceptible change of structure, in consequence of its connection with the arachnoid covering it, it is impossible to say. It does not, however, require any great stretch of imagination, when we look at the intimate union by means of blood-vessels, which exists between the cortical substance and the membranes covering it, to cause us to believe, that neither can be the seat of inflammation, without the function of the other being materially disturbed. But on the other hand, we frequently meet with the ravages of chronic arachnitis, where no symptom of mental derangement had been present; as for example, in cases of epilepsy; so that at last we are obliged to acknowledge, that there are mysteries still inscrutable, connected with the pathology of the brain and its membranes.

Case VII. *Dilatation of the Heart.*—J. E., a Negro, ætat. 56, habits temperate, previous health good. Admitted March 29th, died June 28th, 1839. On the 1st of May, 1838, as he was going to his work, early in the morning, he was suddenly attacked with violent palpitation of the heart, accompanied by vertigo, which caused him to fall down in the street. He was not deprived of consciousness, but was unable to rise for some time. His left arm was paralysed. He was bled and purged, by which he was entirely relieved in a short time. He continued to enjoy good health until last Christmas; at which time the palpitation of the heart returned; and along with it, dyspnœa and a troublesome, dry cough made their appearance. He attributes his last attack to exposure to cold. On applying the stethoscope, the motions of the heart were discovered to be exceedingly irregular. Several pulsations could be heard and felt, say three or four, varying in the loudness of the sound, and in the degree of impulse given; and these were followed by a great bound or heave, sufficient to elevate the head of the auscultator. There was a constant repetition of this series of movements. A bellows murmur, corresponding with the second sound of the heart, was heard indistinctly, when he was admitted. It became daily more audible, as the symptoms became worse, and the disease advanced towards its fatal termination. There was more extensive dulness, on percussion, of the precordial region, than is usual. The diagnosis was, enlargement of the heart, with thickening and induration of the mitral valve.

Post mortem examination. *Thorax.*—The heart was double the natural size; but was enlarged chiefly by dilatation of all the cavities. The walls of the ventricles were but little hypertrophied. The septum ventriculosum

was more hypertrophied than any other part. The anterior portion of the mitral valve was thickened and indurated, especially at the centre of the free margin. The posterior portion was also similarly affected, but in a less degree. The auriculo-ventricular openings were enlarged. The interior surface of the ascending aorta was of a bright yellow colour, and rough. The serous coat was slightly, the muscular coat considerably, thickened. Nothing remarkable seen in the other organs.

Remarks.—There are three varieties of dilatation of the heart, viz: 1. *Simple dilatation*, in which the cavity is enlarged, and the walls are of their natural thickness. 2. *Dilatation with thickening*, in which the cavity is enlarged, and the walls are thickened. 3. *Dilatation with attenuation*, in which the cavity is enlarged, and the walls are attenuated. In the case which I have just narrated, the walls were so little thickened, that it perhaps might, with propriety, be ranked in the first class, and called a case of simple dilatation. Dr. Hope informs us, that dilatation occasionally affects only a single ventricle, and it is generally the right; but much more commonly it attacks both. The auricles being protected by their valves from the direct influence of the numerous causes of pressure which operate on the ventricles, are far more exempt than they, both from dilatation and hypertrophy. But when the auricular valves are diseased, whether their state be that of contraction, which impedes the transmission of the auricular blood, or of permanent patescence, which allows a regurgitation of the ventricular, the auricles suffering unnatural distension, become dilated. The mechanical effect of over-distension being the cause of dilatation, we can easily see, in the above case, how the obstruction offered to the passage of the blood, from the left auricle to the left ventricle, by the diseased condition of the mitral valve, would dilate the left auricle, the right ventricle, and the right auricle; but it is not so easy to discover the cause of the dilatation of the left ventricle. It may be regarded as doubtful, whether the roughness of the inner surface of the aorta, combined with the diminished elasticity, or capacity of expansion, produced by the thickening of the two inner coats, would offer so great an obstacle to the passage of the blood out of the ventricle, as would suffice to dilate the cavity. No other obstruction is discernible; and although, as a general rule, it is better to remain in ignorance, than to adopt and be satisfied with an insufficient explanation of a phenomenon, still, if we are not blind to the unsatisfactory nature of our solution of the problem, we will not be precluded from a continuance of our researches.

In dilatation with hypertrophy, Dr. Hope says, the sounds are increased. This was the case in the present instance. He also tells us that the ventricular contraction is sometimes accompanied with a bellows murmur. This he has found to be almost always the case when the heart is extremely large, and contracts with vehemence. The heart in this case was very large; but, probably, the hypertrophy was not great enough to produce the bellows murmur corresponding with the first sound, or ventricular contraction. The

only bellows murmur heard, accompanied the second sound, or ventricular dilatation.

The same author informs us, that sometimes while several beats of the heart are *heard*, one only is *felt;* and if this be vigorous, it warrants a conclusion that the parietes are little attenuated. Laennec, he adds, does not make this observation, but he has assured himself of its accuracy by numerous post mortem examinations. To a certain extent, this distinction between hearing the sounds, and feeling the impulse, wonld apply in the foregoing case. The small beats of the heart were heard more clearly than they were felt, while the large one was felt more plainly than it was heard. Dr. Hope associates these peculiarities with a small amount of attenuation; whereas, in this example, there not only was no attenuation, but there was some hypertrophy. Symptoms arising from vital action are so much diversified by idiosyncrasies of temperament, and the structure of the organism, that it is extremely difficult, if not altogether impossible, to discriminate small differences of morbid condition, where they approximate so closely, as in the instances of a little hypertrophy, or a little attenuation of a dilated heart.

It seems now fully established, that all the adventitious sounds of the heart are caused by certain anormal motions or currents produced in the column of blood, whereby this, which usually glides on smoothly and silently, is thrown into sonorous vibration. Where the mitral valve is thickened and indurated, it does not play freely, and, therefore, does not open sufficiently during the ventricular dilatation, to allow the blood to pass from the auricle to the ventricle with its accustomed facility. The consequence is an unnatural motion, and a sound to correspond. The occurrence of several feeble pulsations of the heart, followed by a strong one, can be accounted for in the same manner. The blood not having a ready exit from the auricle, the ventricle for two or three beats has but a small quantity to expel, and therefore contracts with no great force. But during this time an accumulation has taken place in the auricle, which becoming greatly distended, contracts forcibly to relieve itself, distends the ventricle to its utmost limit, and stimulates it to contract violently for the purpose of emptying itself. The same causes continuing to operate, we have a recurrence of the same movements. It is not impossible but that the force with which the auricle contracts, when enormously distended under these circumstances, may assist in bringing on the unnatural dilatation of the ventricle; and it is not entirely beyond belief, that this force alone would produce it.

Case VIII. *Syphilis—Phthisis—Dysentery—Dropsy of the Fallopian Tubes.*—C. M. ætat. 21, admitted June 8th, 1839. This girl by her own admission, became a prostitute at twelve years of age; and was so much injured by her first copulation, that violent inflammation ensued, with great tumefaction of the labia. The labia externa have not regained their natural dimensions. They are about twice the ordinary size, and of scirrhous hardness. When

admitted, she was weak and emaciated, and had a large ulcer on the inner side of the left nympha. She was subjected to a slight mercurial course, under which the sore was healing, when she was attacked with dysentery, which soon became an intractable diarrhœa, under which she sank on the 12th of August.

Post mortem examination 12 hours after death. *Thorax.*—The upper lobes of both lungs contained tubercles, in some of which the process of softening had commenced. *Abdomen.*—The colour of the mucous coat of the stomach was an intermixture of gray and red. The red parts were somewhat softened. The mucous coat of two-thirds of the colon, beginning at the rectum, was thickened and indurated. The muscular coat slightly hypertrophied. The inner surface of this part of the colon was extremely rough and hard. The mucous coat of the rectum was red and thickened. The liver was of a bright yellow colour, through its whole structure. The Fallopian tubes of both sides were enlarged, and contained a fluid. The tube of the left side, at its largest part, was more than an inch in diameter. The fimbriated extremity was united by a firm adhesion to the end of the ovarium. The dilatation was continued to the point of union. The tube of the right side was something smaller, and its extremity floated loose; but the fimbriæ had entirely disappeared, and in their place there was a termination in a *cul de sac.* Both tubes gradually decreased in size as they approached the uterus, and at the place of junction to it, the appearance was natural.

Remarks.—Dropsy of the Fallopian tubes, the hygroma, of some writers, is not unfrequently met with; and in numerous instances the tumour has acquired an enormous size. When a hygromatous tumour is formed in these tubes, the fimbriæ are for the most part destroyed, and the abdominal openings obliterated. The tube of both sides is generally affected in the same manner, being both distended into complete bags, of a variety of shapes, and always largest at the loose extremity. There are mostly traces of previous inflammation, such as thickened portions, false membranes, and adhesion to parts in the vicinity. De Haen relates a case in which the Fallopian tube weighed seven pounds, and the cavity contained twenty-three pounds of fluid. Frank gives a case, in which a pint of fluid escaped daily from the vagina, till the patient died of consumption. After death, thirty-one pounds of a watery and gelatinous fluid were found in the left Fallopian tube. We cannot, during life, distinguish this form of dropsy from that of the ovarium. This is of little importance, inasmuch as all internal remedies are known to be equally unavailing in both diseases. De Haen states that death has followed the operation of tapping for the Fallopian dropsy, and that the viscidity of the fluid making its escape impossible, will render the operation unsuccessful.

Case VIII. *Phthisis Pulmonalis.*—R. W. ætat. 28, admitted May 29th, died July 18th, 1839. Habits intemperate. The symptoms of phthisis

were well marked when she came into the hospital. The physical signs were equally clear. There was bronchial respiration and bronchophony at the top of the left lung, and pectoriloquy under the clavicle on the right side. The disease pursued its usual course. Diarrhœa came on about two weeks before her death, and could not be checked.

Post mortem examination twelve hours after death. *Exterior.*—Emaciation great. *Thorax.*—The upper lobe of the left lung, and parts of the superior half of the lower lobe were filled with tubercles, of various sizes, and some of them were beginning to soften. The right lung was still more extensively tuberculated, and in the upper lobe there was a large cavity. There was extensive and firm adhesion of the right lung to the pleura costalis. The trachea and larynx, particularly the former, were red and rough on the inner surface. There was no ulceration of these latter parts.

Abdomen.—Four small ulcers were found in the pyloric extremity of the stomach. They had raised edges, and the mucous coat around their margins was separated from the muscular coat. This latter was not affected with the ulceration. The colour of the mucous coat at the pyloric extremity was a light blue. The remainder was a pale yellow. A number of ulcers, of various sizes, were found in the duodenum, jejunum, and ilium. They were ragged round the edges, and their surfaces were uneven. The largest were one and an half inch long, by three-quarters wide. Opposite to every ulcer, and underneath the peritoneum, tubercles were seen, the number varying from ten to thirty, according to the size of the ulcer. The smallest were as large as pins' heads; the largest about the bulk of a small pea. The mesenteric glands were considerably enlarged, and were filled with tuberculous matter. The colon was also ulcerated in many places; some large and others small. The ilio-colic valve was extensively ulcerated. The ulceration, in some of the larger ones, had extended through the sub-mucous coat to the muscular coat. There was but little redness around any of the above mentioned ulcers; and the mucous coat, at the intermediate spaces, was generally of the natural colour, except towards the lower part of the colon, and in the rectum, where it was slightly reddened.

Remarks.—I have very seldom met with ulceration of the stomach in my post mortem examinations. Discoloration, with thickening, and softening or hardening, the effects of chronic inflammation, are the most common appearances. Latterly, I have seen but two other cases. They both also died of tuberculous disease. One of the ulcers in one of these examples, there being only two or three present, was situated in the great extremity of the stomach. There was in this case also, about the same extent of ulceration of the jejunum and ilium; and both ovaries were dropsical. The right one was the size of a large orange; the left, of a moderate sized apple.

In the case which I have narrated above, the mesenteric glands were tuberculous. M. Louis, in his work on phthisis, discusses the question, whether these tubercles invariably depend on an inflammatory state of the

corresponding mucous membrane. His statement of facts is contradictory, as given in Cowan and Bowditch's edition. He appears, however, to incline to the opinion, that, as the general rule, inflammation and ulceration of the small intestines is the cause of mesenteric tubercles. There are, however, other cases where he thinks no such dependence exists. Inflammation of the glands themselves, he believes may be one cause; but only in phthisical individuals. He never met mesenteric tubercles except in phthisical cases. These glands are frequently increased in bulk, without being tuberculous.

He tells us in one place, that in every instance, when the mesenteric glands were tuberculous, he has found ulceration of the small intestine; and in another place, on the same page, that the only example of complete tuberculous transformation of *all* the mesenteric glands, which he has seen, was that of a young man, in whom he found the mucous membrane of the small intestine perfectly healthy, as regards colour, consistence, and thickness. This is a palpable contradiction.

The case which I have just given, demonstrates that the irritation proceeding from ulcers of the small intestines, has a powerful agency in the development of tubercles. This is shown by the existence of a large number of tubercles underneath the peritoneal coat, opposite every one of the ulcers of the inner surface of the tube, and at no other corresponding part. Here, then, we plainly see, that the inflammation and ulceration of the mucous coat of the intestines, will cause the formation of tubercles. If the tubercles had been developed antecedent to the appearance of the disease of the mucous coat, it is not probable that there would have been the invariable co-existence of the two at all points. This is made abundantly evident when we consider, that so long as tuberculous matter remains as primarily deposited, whether in the form of gray granulations or crude tubercles, we find the surrounding tissues healthy. The tubercles in this case were still in a crude state, and there was not the smallest appearance of inflammation in the tissues immediately adjacent. If, then, the irritation of an ulcer will produce tubercles underneath the peritoneal coat, *a fortiori*, we might expect them to be developed by the same cause in the mesenteric glands; because the lymphatic vessels, which arise from the ulcerated parts, are concentrated in, and pass through, these glands; and convey a portion of irritating matter, which, we know, does frequently excite inflammation. In a sound constitution, where the tuberculous cachexy does not exist, we will have simple inflammation. In the phthisical constitution, irritation or inflammation of nearly all of the tissues will cause the deposition of tuberculous matter.

The case of the young man mentioned by Louis shows, that, in certain individuals, the tuberculous cachexy is so completely formed, that no irritation whatever is required to cause the deposition of tuberculous matter in the mesenteric glands. Some are born with tubercles already deposited in various parts, particularly in the lungs. In others, the hereditary predisposition is so strong, that they begin to appear early in life. In a third class,

the mode of life fills the blood with the materials of tubercles, which, after a time, are poured out into all the tissues which will receive them. In some places it is retained, and goes through its various transformations. In other places, as upon some of the mucous surfaces, it is soon discharged by the proper outlets.

Case IX. *Constipation—Dysentery.*—M. N., ætat. 35, admitted March 28th, 1839. This woman was found drunk in the streets at night, and was brought out by an officer. For about two weeks she had symptoms somewhat resembling delirium tremens. She talked incoherently, and was tremulous. It was very soon, however, suspected that there was some other cause of mental aberration, at least, associated with the tremulous. She next became taciturn, would not speak to, or notice, any person; and the nurse was obliged to shake her, and put food into her hands, in order to get her to eat. She continued in this state until she was attacked with dysentery, about two weeks before her death, which took place on July 13th. During her last illness, she answered questions rationally, and remarked that whiskey had brought her to that condition. From the time of her admission until the commencement of the attack of dysentery, she was habitually constipated, and had no evacuation, unless by the use of the most drastic cathartics. No medicine had much effect in checking the dysentery.

Post mortem examination twelve hours after death. *Brain.*—Meninges, cineritious and medullary substance, free from morbid alteration. *Thorax.*—Lungs and heart sound. *Abdomen.*—The whole inner surface of the stomach, was red from turgescence of the vessels; but there was not any well-marked change of texture of the mucous coat. It was perhaps rather thicker than natural, but was scarcely if at all softened. Portions of the jejunum, and of the upper part of the ilium, were in the same state of redness. The entire extent of the rectum and colon, from the anus to the caput cœcum, was greatly thickened and indurated. All the three coats, the mucous, muscular and peritoneal, were about equally hypertrophied. In some places, the bowel was between a quarter and an half inch thick; in none less than two lines. The texture of all the coats, was that of scirrhus. The mucous coat, on its inner surface, was exceedingly rough, and of a dark red colour. It was as hard as cartilage, and not the smallest appearance of ulceration could be seen. The same thickening and hardening process, had been going on, in the lower part of the ilium. Eight or ten inches of this bowel, above its junction with the cœcum, were in a similar condition; but the coats were not so much thickened, nor quite so greatly indurated. There was but little contraction of the intestine at any of these diseased parts.

Remarks.—Constipation of the bowels arises from a great variety of causes. Scirrhous degeneration has been frequently found to exist, when there had not been the smallest suspicion of it during life. The caput cœcum and the sigmoid flexure of the colon, and rectum, are said to be generally the seats of the change

of structure. Thickening and ulceration are the ordinary effects of the morbid action in the cœcum. In the sigmoid flexure, and rectum, the caliber of the tube is not unfrequently diminished, forming permanent stricture. This case is remarkable for the great extent of the bowel affected, and the extreme thickness and hardness of the coats. The sensibility of the mucous and muscular coats, must necessarily be so much diminished in these cases, that it is not at all surprising, that large doses of the most drastic cathartics are required to act on the bowels. When dysentery or diarrhœa once begins, the same cause will prevent medicine from acting so as to arrest the disease.

The morbid conditions of the colon have been mistaken for disease of the liver; an organ which, for a long period was regarded as the source of all abdominal disorders. I have seen a case of chronic colitis, with whitish, glairy, mucous discharges, treated as a case of chronic hepatitis, by the exhibition of mercury, and with the effect of increasing the disease. Modern pathology, however, has corrected all this. Still it is to be feared, that too many are not as familiar with the improvements of our day, as they ought to be.

The mental affection in this case, must obviously be attributed to functional disturbance of the brain. That she had delirium tremens was plain; but it did not readily yield to the remedies I am in the habit of employing, and there was evidently something more than the hallucinations of *mania a potu.* Her incoherence partook more of the character of insanity, than of the other disease; and after she was relieved from the tremors and other symptoms which are the effects of temulence, the taciturn state into which she fell is not the ordinary sequela of delirium tremens. There can, however, be no doubt that all the derangement of the functional action of the brain, both as regards mind and body, was the effect of the inordinate use of ardent spirit.

Case X. *Scrofula Morbus Coxarius.*—M. R. ætat. 20 years, Negro, admitted August 24th, died September 11th, 1839. This woman was found to have constant fever. She was considerably debilitated, but could not be prevailed upon to lie in bed, until she became so weak as to be unable to sit up any longer, on account of an aggravation of the pain of hip and thigh. On examination, the two upper thirds of the thigh, on the outer side, were observed to be occupied by a large tumour, gradually increasing in size from its lower boundary, where it came to a point, up to the neighbourhood of the hip joint. It was not tender to the touch, but when the thigh was moved, she complained of excruciating pain. She was but little relieved by medicine.

Post mortem examination twenty-four hours after death. The tumour of the thigh was found to consist of a mass of matter very much like dry cheese curd, in friable lamps, and the greater part of it slightly tinged with a red colour. It extended upwards above the hip joint, and was deposited

in a sac, underneath the fascia lata, and the tensor vaginæ femoris; and a process of it was traced up to the neighbourhood of the ischiatic notch. The upper portion crumbled when removed by the scalpel. The lower, narrow part was softened, by an admixture of purulent matter. A portion of this same curd-like matter was found in the hip-joint. The head of the femur was entirely denuded of its cartilage, and the bone exposed, rough and of a red colour. The cartilage of the acetabulum was also in a great measure destroyed. The uterus and ovaria were taken out, and a tumour, the size of a walnut, was discovered behind each ovarium; which, when opened, poured out a quantity of white, soft matter, of the consistence of thick cream. The interior of the uterus was filled with a white, dry, cheesy matter; on removing which, a thick, white, false membrane, was observed, lining the whole cavity, with the exception of a small portion of the neck, adjacent to the mouth. The lungs were filled from top to bottom, with miliary tubercles. The right lung was generally adherent to the pleura costalis; the left was perfectly free. There was nothing particular in other parts.

Remarks.—The scrofulous diathesis was strongly marked, in this case. It would appear, that in order to have tuberculous matter deposited in any tissue, it was only necessary to have some irritation set up, in sufficient degree. The disease of the hip joint was of the ordinary character, viz., ulceration of the cartilage. According to Mr. Brodie, at whatever period of morbus coxarius an examination of the joint is made, the cartilages are found in a state of ulceration; but the morbid affections of the soft parts and bones vary very much, nor are they much altered from their natural state, except in the most advanced stage of the malady. Previous to ulceration commencing, the cartilage undergoes a remarkable change, becoming soft, and assuming a fibrous appearance, which proves that the ulceration is produced by the action of its own vessels, and that it is not acted upon by the vessels of the bone to which it is connected.

The primary irritation in the above case, was doubtless seated in the hip joint. It was thence extended to the parts on the outside of the joint, and produced the tuberculous deposit, which formed the tumour of the thigh. Some irritation of the uterus and ovaria, caused an analogous deposit in them; and it was only necessary that a certain amount of disease of the small intestines, perhaps nothing short of ulceration, should have been present in order to have had tuberculous deposit in the mesenteric glands.

Case XI. *Anasarca—Ascites—Hydrothorax—Extensive Tuberculous Disease of the Thorax and Abdomen.*—J. N., Negro, ætat. 23, admitted August 14th, 1839. The symptoms of all the above mentioned forms of dropsy, were well marked. No medicine made the slightest impression on her diseases, and she died September 3d.

Post mortem examination twelve hours after death. *Thorax.*—There was a large quantity of serum in both cavities of the pleuræ. The middle

lobe of the right lung was little else than a mass of tuberculous matter not softened. The lower lobe was filled with rounded tubercles of various sizes. The upper lobe was almost entirely free from tuberculous deposit. The left lung had a considerable number of large and small round tubercles, scattered through its substance generally. The bronchial glands were a mass of tuberculous matter. The heart was covered with a layer of semi-gelatinous, false membrane.

Abdomen.—A large quantity of serum was evacuated. The small intestines and the colon, were united by a thick, false membrane. The former were completely surrounded, and the mesentery was covered by a false membrane, fully one-eighth of an inch thick, which was filled with small round tubercles. The ilium and jejunum were drawn out as from a tube. The false membrane on the colon and uterus, was not so thick as the above. The stomach was free from it. The omentum was slightly thickened, and contained a large number of small tubercles. The right side of the convex surface of the liver was coated thickly with tuberculous matter; and a great many round tubercles were dispersed through its substance. The mucous coat of the colon and ilium were slightly reddened and softened at a few points. There were no tubercles under the mucous coat; but there was tuberculous deposit in the mesenteric glands. The whole inner surface of the stomach was covered with small shallow ulcers, to the amount of nearly one hundred. The mucous coat was red in patches, and softened. The spleen was coated with tuberculous matter; and a great many were found pervading its substance. There was one tubercle on the outside of each kidney, but none in the interior.

Remarks.—We here have a remarkable example of tuberculous peritonitis, and general deposition of tuberculous matter. In no other instance have I seen false membrane any thing like as thick as was found in this case. She was so stupid, and had so much difficulty in talking, from the embarrassment of the respiration, that I could make nothing out of her account of her previous history. She did not complain of pain, and I could not discover whether there had been symptoms of acute peritonitis, at the commencement of her illness. It is most probable there was not, or she would have had a distinct recollection of them. Where the tuberculous diathesis is strongly marked, a very small degree of irritation will cause a deposit to be made in most of the tissues. It is not, therefore, surprising that the chronic peritonitis, which led to the formation of such thick false membrane, should also have produced tubercles. The upper lobe of the right lung, it will have been observed, was much more free from tuberculous deposition than either of the lower lobes. This is contrary to the law which applies almost universally. We have here, too, tuberculous disease of the mesenteric glands, in the absence of ulceration of the small intestines. The irritation communicated from the inflamed peritoneum surrounding them, was sufficient to produce this result.

Case XII. *Insanity—Dysentery.*—P. G., ætat. 70, admitted April 10th, 1839. The insanity in this case was complete. She was almost continually talking incoherently, and occasionally was exceedingly obstreperous. Her paroxysms of anger, when any thing displeased her, were extremely violent. She was attacked with dysentery, and soon refused to take medicine; and although the symptoms were mitigated by injections, she gradually declined, and died exhausted by the constant discharges from the bowels, on the 28th of July.

Post mortem examination thirty-six hours after death. *Brain.*—The dura mater adhered with extraordinary tenacity to the cranium; so much so indeed, that it was split and lacerated in separating the skull. Strong and extensive adhesions existed between the two surfaces of the arachnoid membrane, along the central margins, and over the superior surfaces of the hemispheres of the cerebrum. Glandulæ pacchioni, of unusually large size, were seen in great numbers at the same places. The arachnoid lining was of a pinkish colour, and on the base of the cranium, on the right side, in front of the petrous portion of the temporal bone, there was a spot half an inch in diameter, the colour of which was a dark purple. The arachnoid covering of the upper surface of the hemispheres was opaque and thickened; and adjacent to the central division, was thickened and consolidated in an extraordinary degree. The vessels of the medullary substance of the cerebrum, and also those of the surfaces of the ventricles were remarkably turgid. On slicing and scraping the brain in various directions, an extraordinary number of red points were visible, and also a great number of large red lines. The medullary substance of the cerebrum was unusually firm and solid; the cortical was normal.

Thorax.—Nothing abnormal except considerable debilitation of the ascending aorta, and slight thickening of its sigmoid valves.

Abdomen.—The inner surface of the stomach, towards the pyloric extremity, was of a bluish, gray colour. The mucous coat of the lower part of the ilium, was red and thickened, and the muciparous glands were very much enlarged. The mucous coat of the colon was thickened and indurated, and its surface was uneven. Portions of it, of various sizes and shapes, in some places forming large patches, were elevated above the other portions of the membrane, and were somewhat reddened. The entire surface was thus rendered rough, and the raised parts, were more indurated than the lower portions. The mucous coat of the rectum was likewise thickened, and was of a dark red colour, inclining to blue. About five inches of the upper part, with a portion of the sigmoid flexure of the colon, were of a dark purple colour almost black, and softened.

Remarks.—In this case, the effects of chronic meningitis are more clearly seen, than in any I have detailed. But there was no adhesion of the arachnoid membrane to the cortical substance; neither was there any softening of the cortical substance; and, nevertheless, the insanity was strongly charac-

terised. The cortical substance then, could only have been functionally disturbed; and admitting it to be the seat of intelligence, it may well be questioned, whether functional derangement alone, would cause such furious mania, as prevailed in the above case. We seldom see so great a degree of congestion of the medullary substance, as was here observed; and in place of being softened, it was consolidated. If we should decide upon the question as to the location of the intellect, from this case, we must fix either upon the medullary substance or the meninges.

Case XIII. *Dementia—Phthisis—Diarrhœa—Latent Pleurisy.*—P. G., ætat. 28 years, admitted March 2d, died June 26th, 1839. This girl was brought to the Alms House by her friends, because they could not prevent her from wandering about the country, and exposing herself to the inclemencies of all seasons. She was gentle and harmless; and her imbecility of mind approached very near to complete idiocy. She had never been otherwise. Diarrhœa made its appearance shortly after her admission; and the ordinary remedies had only the effect of producing a temporary diminution of the quantity of the discharges.

Post mortem examination. *Brain.*—There was slight vascular turgescence of the medullary centres of the hemispheres of the cerebrum. This was the only morbid appearance, with the exception of shallowness of the convolutions of the hemispheres. Their depth was at least one-third less than is usual.

Thorax.—There was extensive adhesion of the left lung to the pleura costalis. There was a pint of serum in the sac of the pleura of this side. Tubercles in large number were found at the top of both lungs; but more abundant in the left lung. The pleura costalis of the left side was covered with unorganised lymph; and where it lined the diaphragm, a thick coating, of hard, dry, friable tuberculous matter was seen, which was easily broken off.

Abdomen.—The mesenteric glands were greatly enlarged, and filled with tuberculous matter. The colon was extensively ulcerated. One very *large* ulcer occupied the caput cœcum, and had destroyed the muscular coat, in some spots as well as the mucous. Another *large* ulcer was found in the rectum. There was also an ulcer in the ilium, ten or twelve inches above its termination.

Remarks.—Here we have a case in which the cortical substance would appear to have performed a prominent part. The atrophy was well marked; and as there was no other morbid alteration of any account, we are shut up, to regard this abnormal condition, as the cause of the mental imbecility. It would appear not to have been atrophy from disease, but a congenital want of development.

We occasionally meet with cases where pleurisy remains concealed; and the first intimation we have of its existence, is at the post-mortem examination. It usually occurs where the sensibility has been greatly reduced by

other diseases. This girl made no complaint about any thing. She answered questions, but was generally, correct only in part. I had to depend chiefly on the nurses for an account of her symptoms. The mesenteric glands did not owe their tuberculation in this case, to an irritation derived from ulcers of the small intestines. The single ulcer of the ilium was not likely to have been the cause of the extensive disease of these glands which was observed.

Case XIV. *Phlebitis.*—The same girl whom I cured of phlebitis last year, and whose case I published in the February Number of this Journal, came into the syphilitic ward again this summer; was attacked severely with dysentery, and was bled four times. The last bleeding was in the arm opposite to the one in which the vein was inflamed before. It was followed by phlebitis. She called my attention to it immediately. The vein was inflamed both above and below the orifice. An emollient poultice was applied to the opening, which was red and tumid; a blister was put on above and below the poultice, and an eighth of a grain of tartar emetic was ordered every two hours. The inflammation extended slowly upwards, until the subclavian and internal jugular veins became painful. It was pursued by the fresh application of a blister every day, until at length, the whole side of the neck was vesicated. On the third day the antimonial solution was discontinued, and five grains of blue mass and one grain of opium, were ordered twice a day, which were omitted as soon as her gums became slightly sore. She had previously been so freely depleted for the dysentery, that there was no necessity for a repetition of blood-letting. Her pulse was very much accelerated; there was considerable anxiety of countenance; and she complained greatly of the pain along the course of the brachial vein; especially when she attempted to straighten the arm. Emollient poultices were applied immediately after the removal of the blisters. I was apprehensive of the result during more than a week; but she has perfectly recovered.

Article IV.—*Case of Triplets.* By M. Donnellan, M. D. of Pointe Coupée, Louisiana.

Saturday the 15th, about midnight, I was called, in great haste, to Madam B., a large, robust lady, aged 36, who had already given birth to six children, of whom five are living, and who was then in labour. About half an hour before my arrival, she was delivered of one child, assisted by her mother, quite an old lady, who told me that the child was born feet foremost. The pains were pretty sharp and frequent, though not effective; and at each, unruptured membranes could be felt; but neither

head, nor any other part was perceptible to the touch through them. I made repeated, but unsuccessful attempts with the introduced finger to rupture the membranes; well aware that the waters once discharged, the uterus by its tonic contraction, would more closely and firmly embrace its contents, and that thereby the alternate contraction would have more force and efficacy in propelling them. After a few hours, a foot could be felt, during some pains, which would occasionally be propelled to the presenting extremity of the membranes, but receding upon the slightest touch.

As the woman was strong and robust, the pulse by no means feeble or flagging, and no alarming complication, I waited several hours, in the expectation that the membranes would either give way of themselves, or that as they descended slightly, I might, during some future pain, be successful in rupturing them, in the ordinary way, with the finger. Finally, the alternate contraction being almost suspended, the woman's courage and patience exhausted, and her mind tortured with the apprehension of imminent danger, I introduced a common silver probe, the point of which, though not very sharp, was nevertheless guarded with the end of the finger, cautiously scratched the membranes, when an extraordinary quantity of water was discharged. Frictions being renewed on the abdomen, and my patient's hope somewhat revived, the pains soon became frequent and forcible. To the finger now introduced, the sensation of touching two heads at once, was communicated. A second child was very soon born *head foremost.* Having tied and cut the cord, I commenced frictions upon the abdomen, which were continued a few minutes; then with the view of bringing away the placenta of the first child, I took hold of its cord with the left hand, in order to use gentle traction should it be found detached from the uterus, and, at the same time introducing the right, I distinctly felt the head of a third child, presenting naturally. Having two scruple doses of fresh ergot with me, I immediately administered one of them, in order to hasten the delivery of the third child and placenta, and, at the same time, to produce more promptly and effectively, the tonic contraction of the uterus; fearing, from the great extent thereof occupied by the placenta, that there might be an alarming, and even dangerous hemorrhage. Powerfully propulsive pains rapidly supervened, and the third child was delivered in about half an hour after the second, *also head foremost.* The third cord tied and cut, brisk frictions were renewed on the abdomen, and in less than five minutes, slight traction upon the first cord sufficed to bring away the placenta, of which there were but two. One of them was an enormous parallelogram, having two of the cords attached at equal distances from each end, with a space of probably nine inches between them; the other was of the usual figure and dimensions, in the centre of which the third cord was implanted.

Frictions were made on the abdomen after the expulsion of the placentæ;

and so promptly and energetically did the tonic contraction of the uterus take place, that there was scarcely any hemorrhage whatever.

The children are of both sexes; the first and last born being boys; the other a girl; the first born had his own membranes and liquor amnii separate; the last two were contained in the same water and membranes; their cords being inserted in the large placenta. The aggregate weight of the children, the morning after birth, was twenty-four pounds; the first born weighed nine and a-half; the last seven and a-half; and the other seven. Each child seems as large as if there had been but one; both mother and children are, so far, doing very well.

Fourteen hours elapsed between the birth of the first and second child; and if the membranes were not double (which I am strongly inclined to suspect was the case, from the difficulty I experienced in tearing them to examine the placentæ,) they were unquestionably preternaturally thick and strong. "Preternatural strength of the membranes," says Burns, "may also to a certainty prove a cause of tedious labour. This is at once obviated by tearing them, which is done by laying hold of them when slack, during the remission of the pains. It sometimes requires a considerable effort to do this."

Such a proceedure was out of the question in the case just cited, as, in the absence of the pains, the membranes could scarcely be felt, much less laid hold of. Pushing against the membranes with the finger, or cutting them with the nail, as advised by Professor Dewees, will answer in ninety-nine out of a hundred cases, perhaps; but in the case above detailed, it also entirely failed.

If, on any future occasion, I should fail in rupturing the membranes with the finger, I shall have no hesitation in having recourse to the probe, as it may be used with perfect ease and safety; and should the woman be timid and very fearful of instruments, might even be introduced without her or the bystanders observing it.

The eleventh day after accouchment, the mother of the triplets was seized with an attack of puerperal mania, which lasted about six days.

The lochia had not entirely ceased but consisted of a whitish discharge, which disappeared altogether in a few days after the commencement of the attack. The milk, which, at the time of seizure, was scantily secreted, diminished *pari passu* with the progress of the disease; though, at no time, was there a total suppression. The skin of the head, trunk and upper extremities was cool and very moist all the time; but that of the lower extremities, though cool, was not moist. The pulse, which in the forenoon was 100, rose, during the afternoon, to 120; it was not hard nor chorded, but rather soft and compressible. The tongue was generally white and moist. There were remissions and exacerbations in the disease corresponding to the state of the pulse, the patient being every day worse in the afternoon. Religious ideas predominated; the patient, whose name is Julia,

speaks only French, calling herself Sainte Julie, and speaking continually of le Bon Dieu.

The treatment consisted in leeching the temples, after which twenty grains of calomel were administered at night, followed by castor oil next morning. The bowels were afterwards kept freely open by active injections, and occasional doses of oil; very warm foot baths, with salt or mustard, as also the semicupium, and sinapisms to the inside of the thighs, by way of revulsion, were had recourse to with advantage; camphor was sometimes given, in liberal doses at night, as well to procure sleep, as to diminish the morbid nervous irritability, which was in this, as I believe it is in most cases of the kind, the *fons et origo mali.* Opium being considered only a doubtful remedy at best, in the disease, was not administered; neither was the hyosciamus at first, which, agreeably to that very able and learned lecturer, Professor Sigmond, is contraindicated whenever there is either delirium or mania.

Towards the last, however, the disease being on the wane, the sleep, which followed the henbane, combined with camphor, was certainly productive of benefit. Having observed that my patient became jealous of her husband, and believed him to have conspired, with some others of her nearest relations, against her, I succeeded in undeceiving her; very soon after, she called her husband to her bedside, acknowledged having wronged him, poured out a flood of tears, and forthwith every symptom of mental alienation disappeared.

ART. V. *Reports of Cases of Nervous Affections.* By J. YOUNG, M. D. of Chester, Pa.

CASE I. *Spinal Irritation.*—Miss E. P., ætat. 21, of a good constitution, has uniformly enjoyed good health till within two years; requested that I should see her, January 6th, 1834. In visiting her, I learned that she had been for eighteen weeks past, unable to put her left foot to the floor, on account of pain and soreness under the external malleolus. It was much swollen, of a bright red colour, and exquisitely tender to the touch. Was first attacked with pain in the right side, in the region of the liver: had sent for a physician, who pronounced her complaint liver disease, and prescribed bleeding, purging, blistering, dieting, and finally, salivation. At length the pain moved from the side to where it now is. Her physician then prescribed a great variety of medicines internally, and baths, cataplasms, &c., to the ankle without benefit; and falling sick himself, another attended her for some weeks without the least benefit resulting; she was then removed some miles to a third of much celebrity, who exhausted his resources and his patience, in

vain efforts to produce relief; spoke of amputation as the only remaining resource; and finally handed her over to me, as she was more immediately in my neighbourhood, and the weather was unfavourable for riding three or four miles to visit her.

On my first visit, I found the ankle enveloped in a mercurial plaster, which I ordered removed; I applied six cups *on the sacrum*, which drew probably four ounces of blood; left her some directions concerning regimen; ordered no medicine; and positively forbade any application to the ankle, save only a dry flannel around it.

8*th.* Swelling and redness nearly gone from ankle—has been entirely free from pain since she was cupped; has slept well at night; but her foot and ankle "feels as if asleep." Applied the cups again to the sacrum, and ordered the cupped part to be rubbed with a liniment of spts. terebinth. ol. olivar. et tr. opii three times a-day, commencing to-morrow morning.

11*th.* Swelling, inflammation and formication entirely gone; no pain since first cupping; soreness disappearing: the toes are drawn inward, so that she is "*parrot toed*" with the affected foot: a circumstance not noticed before, but which very probably existed, and which continued to some extent for more than a year after her entire recovery. Continued the friction with the liniment, and the diet as before.

Next day (12th) I was sent for, in haste, to see her; found her with violent lancinating pain in the forehead. Applied a cup on each temple, and three on the nape of the neck. They drew well, and relieved the pain while drawing. She now remained free from pain until the 23d when it returned in the ankle, and was entirely relieved by six cups on the sacrum.

February 3*d.* Sent for to draw one of her teeth—she had been walking about for some days, on crutches; was nearly distracted with pain, in what proved on extraction, to be a perfectly sound tooth. The operation, however, afforded relief.

19*th.* Has been well since last visit—now has violent pain in right hypochondrium, pain at the top of shoulder very severe; a harassing dry cough —no fever. Four cups on the spine opposite the seat of the pain, relieved every symptom of disease within twenty-four hours. I now began to suspect local means were not sufficient to remove the disposition to disease, and ordered carb. ferri. ʒj. three times a day. This was continued till 28th, when I was called to her in the night;—found her puking violently, with violent pain at stomach—extremities cold; had been attacked with chill. Applied a sinapism to stomach, gave a teaspoonful of laudanum. Applied jugs of hot water to feet—she puked in a few minutes after taking the laudanum, and I gave a two grain pill of opium; this was repeated twice at intervals of one hour, without any good resulting. Not having cups with me, I applied two common half-pint tumblers to the spine opposite the stomach, scarified them freely with a thumb lancet, they bled probably four ounces, and relieved her in ten minutes—she sunk into a comfortable sleep

and slept soundly till next morning, when she awoke free from sickness and pain.

To pursue the case throughout would prove tedious, and would be little else than a repetition of the same local treatment, while the general treatment was varied from carb. ferri to Fowler's solution with laudanum; from that to quinine, tinct. valerian, æther, assafœtida, alteratives of blue mass and aloes. In short, tonics, antispasmodics, alteratives of every variety were successively tried, but still the attacks of pain would return at irregular intervals; sometimes in the knee—sometimes in the respiratory organs resembling croup, and sometimes whooping cough, with the most alarming paroxysms of incessant coughing, until the system was brought under the full influence of laudanum. Sometimes for a week or more, she would salivate incessantly, continually ejecting mouthfuls of glairy, viscid saliva—sometimes it would locate itself in the kidneys and loins, when it resembled, in many respects, gravel, or nephritis; at other times the pleura, an eye, a tooth, the ankle, hip or head would be attacked; but they could always be relieved for the time, by cupping and laudanum, or morphine.

It continued thus till March 15th, 1835, with intervals rarely exceeding three or four weeks, and frequently not so many days.

Despairing of effecting a cure, I now ordered pills consisting of arsen. alb. one-sixth gr., ext. belladonna three-fourths grs. each, one to be taken three times a day. In a few days she became œdematous, and they were discontinued till it subsided, when she commenced taking two a day, and in about a month from commencement she had taken 30 of them—she had no other attack of disease till the following June, about three months, when it returned in her knee. I again cupped the sacrum, and ordered the same pills—she took them as freely as circumstances would permit, till 46 were taken, when they were discontinued, and she remains entirely free from all symptoms of her disease at this time.

Case II. On the day that I was first called to the above case, I was requested to see an old lady with colic. She had had frequent similar attacks within the last three months, but always relieved them by domestic means. Her former remedies, however, failing on this occasion, I was sent for. I remained with her three hours, during which time I gave her large doses of laudanum alone and combined with æther; applied hot fomentations to the stomach, sinapisms to the stomach, and all without avail. I now applied four cups to the spine opposite the stomach, and in fifteen minutes she was perfectly relieved for the time. In a week afterwards I was called to her again, with a similar, though less violent attack. I applied the cups at once, and without giving any medicine, or using any other means, she became entirely relieved, and has had no similar attack since.

Case III. Mrs. E. was confined with her first child, October 29th, 1833. She has always enjoyed excellent health. Every thing progressed as well as usual with her until the third week, when she was attacked with a violent neuralgia of the bowels, attended with excessive costiveness; by large doses of morphium, repeated injections, and castor oil, she was relieved in about a week. She was now attacked with pain under the right mamma, alarmingly severe. Not suspecting the nature of the affection at first, a variety of frictions, fomentations, sinapisms, and finally a large blister, were applied; but none of the local applications afforded any relief; and such were the general symptoms that the disease could not be considered inflammatory; large doses of morphium were given, with the effect of very prompt relief. In a few days she was about her room again, when the pain returned in the same part, as severe as at first. We now resorted to morphium at once, which speedily gave relief. Such, however, were the doses required, that for two days the patient was confined to bed, on account of the prostration produced by the medicine. In a few days after getting about the room, the pain returned again; it was relieved in the same manner, and returned the fourth time. I now, for the first time, suspected spinal irritation, and on an examination, found, by pressure on the seventh dorsal vertebra, much soreness, with great aggravation of pain under the mammæ. A cup was applied over the affected vertebra, which at once relieved the pain, without morphium, or any other application; nor did it return again for near six weeks, and then much less violently. A single cup was again applied which produced an entire cure. She has been twice confined since, and has had no return of the pain.

Case IV. *Chorea.* Since my last reported cases of chorea, I have treated *three* others; two in my own practice, and one in consultation. Some months ago I was called on by my friend, Dr. S. A. Barton to consult in a case of this disease; he had had it under treatment about two months, during which time he had used all the remedies usually prescribed, but without the least check having been given to the affection; it, in fact, was gradually progressing from bad to worse, in spite of all his efforts.

The patient was an interesting little girl of 12 years old, and the parents and physician almost despaired of her ever being cured. We placed her on the use of a *heaped teaspoonful* of the pulverised *actea racemosa*, three times a day, and in two weeks every appearance of the disease had disappeared.

Case V. A short time before being consulted in the above case, I was requested to see a little girl aged fourteen, with the same affection. The mother, having heard of the snakeroot as a cure, had procured some and had been giving it ten days, without any effect. The child's general appearance, indicated ill health; she was pale—her appetite irregular; bowels costive—

and from her age, appearance, and her never having menstruated, I supposed if her general health could be restored, her catamenia would probably appear, and perhaps the chorea disappear. I accordingly put her on a course of purgatives, with "Hooper's Pills," (a most valuable article in cases of retained, or suppressed menstruation,) for a month; at the end of this time, her health was much improved; but her catamenia did not appear, and her chorea had increased. It was confined originally to the left inferior extremity. It had now extended to the superior extremity of the same side, and to the muscles of the face, and of deglutition, so that the latter function was performed with much difficulty. We now commenced anew with the actea racemosa, in *teaspoonful* doses three times a day, with Hooper's pills, as occasion might require, to keep the bowels open. In three days, there was an evident improvement, and in six days more, the disease had entirely disappeared; nor has it returned since. She has menstruated regularly for the last five or six months, and enjoys fine health.

Case VI. March 26th, 1838, I was requested to see Miss P., aged between 11 and 12 years, with chorea. The mother supposed it had been stealing on her for three months, but so insidiously, that she was not aware of the nature of her ailment till within two weeks. She has been using snakeroot, but it did not cure. Her general health appears good; spirits lively, appetite variable, the tongue slightly covered with a white slimy coat; bowels tolerably regular. The snakeroot was discontinued, and she was purged actively with Brandreth's pills, (they being a favourite medicine with the mother) for a week; when, through anxiety probably, for the recovery of the daughter, without my knowledge, the snakeroot was again commenced with, and given for some days, but without effect. We recommenced purging, with a restricted diet, and continued it, with the view, not of unloading the bowels alone, but of reducing the system, as she was of a full, robust habit. In about two weeks, the floridness had left her cheeks, and as she was thoroughly evacuated, we again commenced with the snake root. In three days, there was no evident improvement. The warm bath, morning and evening, was now recommended in addition, and an immediate improvement took place, which progressed until on the eleventh day she was entirely well, and has had no return of chorea since.

Concerning the theory of this disease, no satisfactory conclusion has been arrived at; all, however, agree that it is one of the most intractable diseases we meet with. While purging has been found, almost uniformly successful by some practitioners, I must confess that, in my hands, in no single instance, have I found the least benefit result from it. In the first case of the disease I was ever called upon to treat,* I commenced with purging, with cremor tartar and jalap, and in a few days, it was frightfully aggravated, and no good has

* See this Journal, for February, 1832, p. 310.

resulted in any case in which it has been tried since. I have never tried tonics, such as barks, preparations of iron, &c., because, fortunately, shortly before my first case occurred, I heard of the actea racemosa having been successfully used in it, and determined on giving it a trial.

Nine consecutive cases have now been reported, in which it has completely answered the purpose for which it was given; eight by myself, and one by Dr. Lindsay of Washington city. This is a successful result that has not attended any other known mode of treatment; and establishes the fact of this article possessing greater controlling powers over this disease than perhaps any other article with which we are as yet acquainted.

That there are cases, which it will not cure, without other *preparatory* means, is not denied; the second case above reported, goes far to establish that fact; the last case, too, furnishes evidence, that active and continued purging would not cure, nor in the least relieve the patient; as well as that, perhaps, the actea would not of itself cure; after purging and dieting, however, aided by the warm bath, it was perfectly and speedily successful. There are, doubtless, too, other cases depending on obvious causes, which this, or any other remedial agent now in our possession or perhaps in existence, can control; such as tumours, or morbid growths affecting the great nervous centres. One such case, in which the muscles of one side of the face, and one arm became affected, during the progress of a chronic disease, which was evidently caused by a tumour in the brain, and which, it is almost needless to add, terminated in death, after a protracted illness of four or five years, I have met with. In many cases, however, this article will be found sufficient to cure, without any other means whatever being used; and in a very large proportion of cases, where all other means fail, this alone, or conjoined with other medicines and means which have been heretofore found serviceable in occasional cases, will, I believe, place this intractable disease, as much under our control, as many of the more manageable ones now are.

Case VII. *Epilepsy.* It was suggested, in my first communication on this subject, that the actea probably might be found serviceable in some other of the *neuroses.* Acting in this belief, since that time, I have used it in two cases, of what I believe was incipient *epilepsy.* The cases were twin sisters, in a family in which epilepsy had been hereditary among the females, for two or three generations. At the age of about fourteen, one of them, from having previously enjoyed very good health, became subject to attacks of pain in the head, preceded by giddiness, nausea, lassitude, &c. The frequency of these attacks increased, from once in five or six weeks, to once a week, or oftener; at length one of her attacks was accompanied with a "severe fit." I was sent for in haste, but not being found, another physician was procured, who prescribed an emetic, to be followed by a cathartic, &c.; in a few days she was as well as usual again. In about two weeks,

she was similarly attacked, with another "fit." On this occasion, I was again called on; but before my arrival the fit had gone off. I found the patient stupid and dull, complaining of an uncomfortable feeling in the head, but had no knowledge or recollection of any thing more than common having been the matter. I was informed that, since her former attack, she had been well as usual; cheerful, lively, a good appetite, and every thing indicating good health, until that morning, when she got up with a swimming and giddiness of the head, and in about two hours after, she fell down in a fit. The parents were excessively alarmed, dreading the malady several aunts, &c., had been afflicted with for life, and implored me to arrest it, if possible. I ordered a cathartic of calomel and jalap, and the actea racemosa to be procured, as soon as possible. It was got, and she commenced the use of it next day, a large teaspoonful three times a-day; it was continued four days in the week, with an omission of three, for a month. More than five years have elapsed since that time, and she has never had a similar attack. She commenced menstruating awhile after having taken the snake root, and has ever since enjoyed excellent health.

Case VIII. A few months after the above attack, her sister was taken very similarly, with some headache, &c., and finally a fit. I saw her in an hour after her recovery; she was languid and dull; was not aware of having had a fit—she had never menstruated. I ordered her a cathartic of calomel and jalap.

They had a quantity of the actea remaining since her sister's illness; I ordered her to use it, as her sister had done. She never had any thing like a fit since; but soon after became "regular," and has enjoyed fine health from then till now. Whether these were commencing epilepsy or not I am not certain; and what share the snakeroot had in preventing the recurrence of them I know not, but such were the symptoms of the cure, and such were the only means used, and the patients both got well, and have continued so ever since. Certain it is, the parents and other relations attribute the cure to "them powders;" having assured me at the time, and repeated it since, that the patients were attacked "just like their aunt was when she was about the same age," and who, at that time, was upwards of 50 years old, and had been subject to fits nearly 40 years.

Chester, *August*, 1839.

Art. VI.—*Report of Cases of Cutaneous Disease.* By C. A. Porter, M. D. of New York.

Almost every physician, whatever his experience, will admit, we think, that he has encountered difficulties in the diagnosis and treatment of the cutaneous class of diseases. It is not our intention, however, to furnish an elaborate essay. The flood of light shed on this most interesting subject, by those indefatigable investigators, Mercuriali, Turner, Alibert, Retz, Plenck, Willan, Derien, Franck, Plumbe, Biett, &c., renders it unnecessary, had we the ability. We content ourselves, therefore, with detailing such cases as have fallen under our immediate observation.

First order. Squamæ. Case I.—*Psoriasis Invetarata—Treatment seven months—Cured.* This occurred in a gentleman ætat. 28. He has led a sedentary life, and is inclined to scrofula. He thinks that he contracted the disease in the interior of our state, and in the portion known as the lake district. It appeared first in a small spot on the inferior extremities and gradually extended over the body. The face only was free from it. He was directed pills mass. hydrarg. ℈ss. at bed time, and the following morning ℞. pulv. rhei. ust. magnesiæ, āā ℥j. aq. menth. ℨvj. and a bath made emollient with ℔iv. of starch, and the next day a vapour bath. A few days after, he was placed on proto-iod. hydrarg. gr.$\frac{1}{4}$, twice a day. (The treatment began in June.) An emollient or vapour bath continued every second or third day.

July 11*th*, Directed the following ointment; ℞. proto-iod. hydrarg. ℈j. axung. porcin. ℨj. M. ft. ung. This treatment was continued with vapour baths (used for twenty minutes at a time) every few days.

29*th*. Directed sulphur. potass. ℨiv. for an ordinary bath tub, and continued in for half an hour.

August 1*st*. Sulphur vapour bath twenty to thirty minutes; proto-iod. hyd. continued internally and externally. The sulphur vapour baths repeated every second or third day.

8*th*. Arsenit. potassæ, gtt. v. twice daily, and increase a drop at every dose.

16*th*. The arsen. solut. has produced gastric irritation. The bowels are costive; discontinue the solution; directed the following; ℞. pulv. rhei, ust. magnes. āā ℥j. aq. menth. ℨvj. wineglassful every two hours.

19*th*. Directed the arsen. solut. gtt. vi. three times a day, and increase a drop each dose until ten are taken.

27*th*. Takes gtt. x. three times a day.

29*th*. Substitute for proto-iodid. this ointment; ℞. deuto-iodid. hydrargyri gr. x; extract. conii maculati gr. v; cerat. simp. ℨss. M. ft. ung. and apply same as the other, and take a vapour bath for twenty minutes.

30*th.* Directed an emollient bath.

September, 5*th.* Directed an emollient bath, and the following: ℞. murias hydrargr. gr. iv; extract. con. mac. gr. v. M. ft. mass. et. divid. in pilulas No. xx. One, morning and evening.

19*th.* Continue mur. hydrarg.

29*th.* Directed emollient and alkaline bath to alternate. No change of treatment through October and November.

December, 7*th.* Patient is desirous to leave the city.

There is remaining only a spot or so. Directed the following: ℞. hydriod-potass gr. x; iodin. gr. v; aq. destill. ʒij. from gtt. xv. to increase up to thirty or forty twice daily, and tabac. ung. to the spot. And after continuing the above for a reasonable length of time, to resume, if necessary, the arsen. solut.

Case II. *Psoriasis Palmaris—Case of long standing—Treatment continued from June* 21*st to July* 27*th.*—Same treatment as in first case, and to detail it from day to day is unnecessary. The vapour baths used were general local, the stream directed on the hands, which were the seat of the disease. The local vapour bath applied for half an hour. The following ointment applied night and morning to the hands: ℞. deut. iodur. hydrarg. gr. xv; axung. porcin. ʒj. M. ft. unguent. The latter part of July. the proto-iodur. was substituted. The cure was complete. Six months afterwards it returned slightly and readily yielded to the proto-iodur. ung. and following: ℞. pilulas hydr. mass., pulv. rhei. āā ʒss.; pulv. aloe. gr. xii. M. div. in pilulas xv. This patient had also acne rosacea, which falls under the class Pustulæ, and which form is oftentimes incurable. Even this by hygienic treatment was benefitted, but for a brief period, for our patient could not long refrain from what has unfortunately become his too luxurious mode of living.

Case III. *Psoriasis Palmaris*, a plain case, and one which we have no doubt would readily have yielded to treatment. The physician of this patient alarmed him by telling him that he had salt rheum, and if he should be cured he would die with consumption.

Case IV. *Psoriasis Pulmaris.*—This occurred in a young gentleman, ætat. 25, and on close inquiry discovered it to be congenital. This with the ointment and local douches was relieved, but we question if it ever can be cured.

Case V. *Psoriasis with Eczema.*—The latter falling under another order, Vesiculæ, will be noticed presently. (See Case VII.) The treatment lasted for a month, and both diseases were cured.

Case VI. *Ptyriasis*, requiring similar treatment.

Case VII. *Ptyriasis and Ephelides or Ephelis.*—The last is under the order Maculæ. This occurred in a gentleman, ætat. 40, and had existed for several years. The treatment continued for six months and consisted of an alterative treatment; emollient and alkaline baths, the last made with sub-

carb. potass. ʒiv, for an ordinary bathing tub; ordinary vapour baths; su phur vapour baths, alternately with each other. The disease invaded pa ticularly the superior extremities and upper region of the body, all above line drawn through the umbilicus. There was much irritation at nigh which was greatly relieved with starch water; one pound clean white starch a gallon or half the quantity of water. Venesection was also directed C Considerable benefit was derived from ℞. act. plumbi. ʒj; tinct. opii ʒ acidi acetici ʒss; aquæ. destillat. Oij; and also ℞. sulphuret. potass. ʒ aquæ fluvial. Oij. The diet throughout this and all the previous cases mil and unirritating; mush and milk or molasses; broths; soups, &c., accordin to the indications. The cure was complete.

Case VIII. *Ptyriasis.*—Patient did not persevere for any time.

Case IX. *Eczema and Psoriasis Palmaris.*—Same result as cas VIII.

Case X. *Psoriasis.*—The gentleman left the city and we do not kno the result. The last three cases might very properly be omitted from th report. The only object in mentioning them, is to show the more frequen occurrence, as far as our experience goes, of this order of squamæ over th others. We may remark here that many other cases of this same orde have fallen under the immediate observation of our friends, J. W. Schmid Jr., M. D., and Minturn Post, M. D., and we acknowledge with pleasure th benefit we have received from their experience as regards both the diagnos and treatment of the diseases here detailed.

Cases XI and XII. These two are cases of *Congenital Icthyosis.* Th first occurring in a gentleman, ætat. 25. The subject of the second, æta 50. This form was subjected to a palliative treatment, and the patient made quite comfortable with emollient and vapour baths. And here we can not refrain from insisting on the importance of diagnosis in this class o diseases, and every one will admit this when we state the fact that case X had been for a long period subjected to a mercurial treatment with the ex pectation of being radically cured. Of course, both the physician an patient were disappointed, to say nothing of the cruel, because useles treatment which the latter had to undergo.

Second order Vesiculæ. Case I. *Herpes Phlyctenodes.*—Under treat ment from June 24th to October 6th. Left the city nearly cured. This occurred in a hale, vigorous man, ætat. 27. The disease had existe for several years, and he had subjected himself to a great variety of treat ment.

June 24th. Directed pilul. mass. hydrarg. ϑss; to be followed with sulph magnesiæ ʒss; and the following wash: ℞. chlorid. sodæ ʒj; aquæ des tillat. ʒiv.

27th. Directed subcarb. potass. ʒiv for an ordinary bath, and to continu in it for half an hour, and take one of the following pills night and morning

℞. pilul. hydrarg. mass. ℈ii; pulv. ipecac. grs. v; pulv. rhei. grs. xii; M. liv. in pilul. xii.

28*th* and 29*th*. Repeat the alkaline bath.

July 1*st*. The patient complaining of a feeling of fulness about the head; discontinued the pills and directed ℞. pulv. jalap. ʒj; sup. tart. potass. ʒiii. M. liv. in chart. vi; one to be taken every second morning, and a vapour bath.

6*th*. Repeat the vapour bath.

9*th*. Directed the following ℞. sulphur sublim. ʒij; sup. tart. potass ℥ss; liv. in chart, No. ii; one taken the same day, and the second on the following day.

13*th*. Directed the following: ℞. pill. hydrarg. mass., pulv. rhei, āā ʒss; M. et divid. in pills No. xii. Dose, two every second night, and followed with Seidlitz' powders next morning.

14*th*. Directed proto-iodid. hydrarg. ℈j; axung. ℥j; ft. ung.; and apply every night; and solut. acet. plumbi through the day.

16*th*. A vapour bath, and an emollient bath two days after.

20*th*. Gave the following: ℞. pulv. jalap, ʒj; sup. tart. potass. ℥ss; M. div. in pill. ij. These to be taken, one in the morning, and the other the following morning. To take also a vapour bath.

23*d*. Repeat the vapour bath.

25*th*. Use the following wash: ℞. acet. plumbi ʒj; aquæ destillat. ℥viij; tinct. opii ʒij.

27*th*. Directed ℞. pulv. rhei, pill. mass. hydrarg. āā ʒss; pulv. ipecac. grs. iij; M. divid. in pill. xii. Two every second night. Take also a vapour bath.

August 1*st*. Directed a sulphur vapour bath, to be continued from twenty to thirty minutes: these repeated August 4th and 11th.

11*th*. Directed liquor arsenical gtt. iv. night and morning; and increase gtt. i. at each dose, daily.

26*th*. Discontinued liquor arsenical, it having produced gastric disturbance, and substituted flaxseed tea.

September 1*st*. Use unguent. sulph. comp.

3*d*. Take a sulphur vapour bath, and the following: ℞. sulph. sup. tart. pot. āā ℥j; M. To be taken daily in doses of from ʒj. to ʒij.

The disease, it should be remarked, has now nearly left all parts of the body, and continues only on the face, and particularly about the chin.

10*th*. Directed the unguent. hydr. mit.

13*th*. Use the following wash, four or five times a day: ℞. sulph. zinci, grs. xvi; aq. destill. ℥viij., and take an emollient bath.

23*d*. Subsitute this ointment: ℞. sup. act. plumb. ʒss; pulv. opii ℈ss; cerat. simp. ℥j.

October 1*st*. Directed ℞. mur. hydrarg. gr.ij; aq. destillat. ℥iv.

6*th*. The patieut left the city with directions to use the following to the

little now remaining on his chin: ℞. hydrarg. precip. alb. gr.viij; cerat simp. ʒss; M. His general health is excellent.

Case II. *Herpes Phylctenodes.*—Treatment from March 16th to April 29th—cured. This occurred in a gentleman, ætat. 25 years, and was confined especially to the face. The treatment consisted at first of an alterative, washing the face in a solution of cort. ulm. rubr.; an emollient bath and vapour douches.

March 27th. Use a solution of acet. plumbi, and take as an aperient, flor. sulph. and sup. tart. potass. In the progress of the case, the prot-iod. hydrarg. unguent. was directed.

This eruption was purely symptomatic of the condition of the alimentary canal of the patient. He was in short, laboring under the first stage of that insidious form of dyspepsia which would have eventuated in the confirmed stage, and then we would have found all the deplorable symptoms which follow in its train. By freely leeching the epigastric region; using the nitro-muriatic foot bath; using freely over the region of the liver, the same acid; and restricting him to a plain, unirritating diet, with syrup guimauve for a constant drink, we relieved all the dyspeptic symptoms, and the eruption was cured at the same time.

Case III. *Herpes Circinnatus.*—This occurred in a young person of fair complexion, and readily yielded to ℞. chlorid. sodæ, ʒss; aquæ destillat. ʒiv, and some mild purge.

Case IV. *Herpes Circinnatus.*—In a gentleman ætat. 35; same result as Case III, except being more obstinate, and requiring with the chlorid. sodæ wash a mild alterative.

We would remark here, contrary to what is stated in the books, "that herpes phlyctenodes disappears about the seventh or eighth day, and seldom continues beyond two weeks, and never more than three:" we are inclined to consider it oftentimes a very obstinate disease, and feel quite confident that such will be the experience of practitioners, who have it to treat.

Case V. *Eczema and Rupia.* This last comes in another order, but for brevity we notice it here. This disease occurred in a gentleman over 50, who had passed a portion of his life in the West Indies. The disease has existed for sixteen years. The leg is inflamed and swollen, and it is with difficulty that he gets around even with crutches. By means of the vapour douches applied to the leg, the proto-iod. hydrarg. for an alterative, and compound decoct. sarsaparilla, keeping the limb in the horizontal posture, and using to the rupia the ointment, ℞. proto-iod. hydrarg. ϑj; mel, ʒi, he entirely recovered.

Case VI. *Eczema—The chronic form—Treatment one year—Cured.* When we first saw this, which occurred in a gentleman ætat. 30 years, the arms were most affected by it. They were much inflamed and swollen from the too irritating applications which he had been subjected to. The treat-

ment consisted of free purging and emollient vapour douches, and when the inflammation was abated, the proto-iod. hydrarg. unguent. In the progress of the case, the hydriod. potass. and iodine solution; the sulph. potass. baths; and with the happiest effects to allay the irritation, the solution of cort. ulm. rubr. or americanus.

Case VII. *Eczema.*—(This was referred to in Case V., Order Squamæ.) This was an acute attack, occurring in a spare gentleman, who had handled sugar, in the way of examining samples. The arms resembled very much the previous case, VI.

December 13*th.* Directed hydrarg. submurias. ϑss, to take at bed time, and follow next morning with ℞. pulv. rhei; ust. magnes. āā ʒj; aquæ menthæ ʒvi. S. Dose half a wineglassfull p. r. n. The hands and arms to be constantly plunged into a deep vessel of tepid water made emollient with a few pounds of starch.

16*th.* Pills of mass. hydrarg. rheum. and alöes, and a vapor douche. The douches, with the proto-iod. hydrarg. unguent, and the proto-iod. hydrarg. internally, $\frac{1}{4}$ gr. twice a day, completed the cure about the middle of the following month.

Cases VIII, IX, X, are *Scabies.* We notice them to introduce the remark that this disease is by no means so frequently met with as formerly. Several of our medical friends have mentioned to us, that it is comparatively seldom that they meet with cases of it.

New York, April, 1839.

Art. VII.—*Remarkable case of Somnambulism.* By S. H. Dickson, M.D., Professor of the Institutes and Practice of Medicine in the Medical College of the State of South Carolina.

N. R. of this county and state, aged about 16, is of short stature, and unhealthy aspect; her look is downcast, and her countenance somewhat deficient, though perhaps not very strikingly so in intelligence of expression. The history and progress of her case is not clearly delineated either by herself or her friends.

She has not suffered much from disease in any form until last October, 1838, when her sleep became disturbed. The first symptom that seems to have attracted notice, was a noise made by the slipping of the head of the thigh bone in its socket. This was attended or followed by some muttering, moaning or childish conversation, in which the words were imperfectly pronounced. She afterwards became subject, while thus talking in seeming sleep, to be attacked by convulsions, and occasionally complained of cramps,

and of pains in the head and stomach. Her sufferings induced her friends to bring her to Asheville from her home, distant some fifteen or twenty miles, to place her under the care of Dr. Hardy of that village. With him I saw her twice, and cannot but regard the case as both singular and highly interesting.

It was astonishing to observe the apparent promptness with which she passed from the waking to the somnambular state. When I first visited her, she was sitting by the fire, looking dull and languid. It was her usual bed time, and she was told to go to bed. She obeyed, and lay down without undressing, drawing up the covering upon her. Almost immediately, I heard her muttering childishly and indistinctly; her hip joint cracked loudly and repeatedly, and her friends said a paroxysm had commenced. Her eyes were open and sparkling, her countenance animated, and her manner gay and lively; all presenting a strong contrast to her former condition as awake. On being desired to lie still and go to sleep, she answered sharply but good humouredly, "I *am* asleep—I *am* asleep." She conversed very freely and rapidly, but with a childish levity and indistinct utterance. This seems to be connected with a partial paralysis. In fact, an intermittent hemiplegia seems to constitute a prominent part of every paroxysm. When she opens her mouth her tongue is seen lying between the teeth on the left side; when she attempts to put it out, it is thrust over to the left so as to protrude the cheek, but she cannot project it beyond the lips. The left hand cannot be closed forcibly; the left leg is less capable of supporting her, and is moved badly when she walks.

From time to time during a paroxysm, she is seized with opisthotonos, which presents this peculiarity. That the muscles of the left side only appear to contract. The heel of the left foot is brought nearly into contact with the back of the neck, while the right foot lies extended. She is drawn or bent over to the left side, in which, and at the end of the sternum, she says there is now excessive pain. She not only exhibits every token of severe suffering during these tetanic attacks, but they are always preceded by moaning, restlessness and evident alarm.

Her convulsions appear to Dr. Hardy to be of epileptic character; they do not occur very often. Sometimes she lies silent and inattentive as if in a stupor, and if observed closely it will be found that her breathing is entirely suspended. Dr. Hardy has seen this state of things (which he considers with good reason as kindred with the epileptic attack) continue with total intermission of breathing for the space of two minutes, the pulse remaining unaffected. I did not happen to see her thus, nor convulsed.

There was at first tenderness along the spine at several points, but this readily subsided under the treatment instituted.

The hip joint has been mentioned as affected principally with the partial dislocation so often repeated, and forming so marked a feature in the case.

The shoulder and the ankle are also occasionally and loudly cracked, but not very often; and these articular disturbances are almost exclusively confined to the left limbs. Her mother, however, says that she has seen this jumping occur in the right hip and shoulder once or twice.

It is difficult to describe these movements; they seem altogether involuntary, and are not always painful. The head of the thigh bone is raised from its socket and drawn forwards and a little downwards, returning with a loud snap. Sometimes it appears to rest on the very margin of the acetabulum; if it retain this position for any definite period, the patient moans or groans, and if asked what is the matter, will reply, "it is *out* now, it hurts me." On one occasion when it is said to have remained "out" for nearly half an hour, her distress became extreme. Every effort of those about her to reduce the bone to its place has invariably failed; nor does she seem to have any voluntary power over it. When she first came under the care of Dr. Hardy, the strength of three or four stout men exerted to resist the motions of the joint when the "cracking" had begun, failed totally. Now, it is easy to keep it still with a single hand, both when the bone is in the socket, and when out of it. It should be stated distinctly, however, that no attempts have ever succeeded either in moving the bone as it is done spontaneously, or in producing the cracking noise, or in restoring it to its place when "out."

The organs of sense are little affected. She hears with great quickness. The pupil of the eye contracts readily on the approach of a candle. When her head aches, which is by no means constant, she says the light "hurts" her. Her taste and smell seem as usual, though she expresses in the paroxysm a strange desire to smoke and chew tobacco, which she has never been known to touch when awake.

The state of somnambulism lasts generally from her hour of going to bed eight or nine at night until two or three in the morning, when it terminates in ordinary sleep. She is apt to rise and walk about at intervals, though she cannot sit up long at a time, becoming pale and languid. While up she often takes food, though her deglutition is slow and embarrassed, owing to the want of command of the muscles of the tongue in this state. Indeed she has been in imminent danger of suffocation while attempting to swallow a morsel. The movements of the hip, too, are more uneasy and distressing if they occur when she is out of bed.

It is very curious to see her occasionally fall into an ordinary sleep during the continuance of the paroxysm, slumbering softly and pleasantly for some minutes, with her eyes closed, and her breathing soft, slow, deep and sonorous. If she has not reached the termination of her period, she is roused again into the somnambulist condition by the motions of some joint, or some cramp, or tetanic muscular contraction.

During the intervals she scarcely complains of any thing. If she falls

asleep during the day, her slumbers are soft and regular; she has never been somnambulant or otherwise disturbed, as I have above described, except at night. She has once or twice been slightly lame after a particularly bad night.

She recollects the train of thoughts and events from paroxysm to paroxysm, or from night to night, and from day to day; but does not, or says she does not remember any thing in the day that has occurred at night. She does sometimes refer in conversation at night to what happens in the day, but it has not been noticed that she ever speaks in the day of any thing that has taken place during a paroxysm.

She left the neighbourhood, and was taken home soon after my second visit to her. She had commenced the use of the tinct. digital. in doses of two to three drachms repeated twice or thrice nightly.

June 14*th.* Her father coming to Asheville for more medicine, reports that she is well, her paroxysms having entirely ceased.

Swannanon Hill, Buncombe County, N. C.

May 14*th*, 1839.

MONOGRAPH.

ART. VIII. *On Diseases of the Stomach.* By N. CHAPMAN, M. D., Professor of the Theory and Practice of Medicine in the University of Pennsylvania.

ON more than one occasion I have intimated the peculiar importance of the stomach in the animal economy. It occupies, perhaps, the highest rank, and possesses the widest influence, owing to its extensive nervous connections. By any diminution of the gastric energy, according to a noted aphorism, "Ventriculo languet, omnia languent," the whole animal frame, corporeal and intellectual, is enervated, and every other viscus, or part of the body, not excepting the brain itself, may be more seriously injured without destroying life, than it. Even the concussion from the wind of a passing ball, has sometimes proved fatal.

Contemplating the vast dominion which it exercises over the living system, it was by one of the earliest physiologists emphatically denominated the animal;—by another, the conscience of the body;—and has been thought to be the seat of the soul itself. But the most philosophical of poets has better described it, and assigned some of its functions.

> "It is the storehouse, and the shop
> Of the whole body. True it is,
> That it receives the general food at first,
> But all the cranks and offices of man,
> The strongest nerves, and small inferior veins
> From it receive that natural competence
> Whereby they live."*

In a more detailed inquiry, I might illustrate, and enforce the view, which has been presented, of the importance of the stomach. But this, in part, would involve physiological speculations, foreign to my province, and to a certain extent, also, lead to an anticipation of what it will be my duty hereafter to say, in treating of particular diseases.

Enough, however, has escaped me, on this and other occasions, to show the consideration which is attached to it, and how indispensable it is, in all our pathological investigations, to keep the prepotency of this organ steadily before us. Never, or very rarely, at least, am I called to a disease, acute or chronic, that I do not ask myself, what concern has the stomach with the case?

Numerous, however, as are the affections, of which it is the immediate seat, it seems to me equally certain, that not a few instances of disease hitherto referred to it, are really lesions of the great centre of the ganglionic system of nerves situated behind it, and on which the actions of organic life so materially depend. This view I shall hereafter have occasion to

* Shakspeare.

exemplify, in treating of certain affections which have been generally considered as strictly of gastric origin and nature.

The first subject presenting itself for examination is:

1. *Gastritis, or Inflammation of the Stomach.*—The phlogosed states of this organ are various. Looking at the several tissues of which it is composed, and the infinity of causes operating on it, from its situation and multiplied connections, such modifications are to be presumed. To point out these in detail were an endless undertaking, and, even if it could be conveniently accomplished, would abound with recapitulations of what has already been delivered, under fever, or other heads, or in anticipation of future discussions.

Exposed to whatever of an irritating nature may be introduced into the stomach, its mucous surface usually becomes the primary and principal seat of the phlogosis, and to this I mean chiefly to confine my remarks. Commencing, however, in that coat, it occasionally involves the cellular, muscular, and peritoneal coverings, or, reversely, originating in the exterior tunic, the irritation may be extended inwardly, and, in either way, we have a case compounded of these states.

Symptoms.—It is hence to be inferred, that to give a just exhibition of the symptoms of gastritis, in the comprehensive sense of the term, is no easy task, and utterly impossible within any narrow limits. Till very recently in the histories of it, no regard was paid to the distinction of tissues, and, being derived from the contemplation of the effects of poisons only, were, of course, exceedingly defective. The phenomena of such matters alone are infinitely diversified, and will be found in the old toxicological treatises to be rather grouped together, than separately or individually portrayed. These, though of late, very minutely discriminated, I shall not now notice, as they may be more appropriately disposed of under the head of poisons. We are aware of the susceptibility of the stomach to inflammation from various other agencies, and that, too, there is scarcely a phlegmasia, however remote in its seat from that viscus, or in whatever mode induced, which does not bring it into participation.

Gastritis differs further in its symptoms, as it may be simply a phlogosis of the stomach, or a fever, a local affection, or with a constitutional disturbance, and scarcely less so, as these states may vary in intensity. There is in this respect the widest difference, all the intermediate states occurring from a mere *malaise* or a sort of indescribable wretchedness, lingering and harassing, to the extremest suffering, by which life is terminated very speedily. The general or febrile condition, very frequently an attendant, is either inflammatory or typhoid originally, or becomes so, and may be even malignant, by which the phenomena are further modified, and, lastly, it is singularly liable to anomalies and extraneous complications. Despairing of doing justice to the subject in a mere sketch, I shall aim only at a little more precision than has hitherto been observed, and particularly as regards the separation of the phenomena of the local from the general affection.

Gastritis, except when caused by certain virulent substances, on which occasions scarcely any reaction taking place, the system escapes from an implication, is ordinarily introduced by anorexia, though the appetite is sometimes temporarily increased, and by a sense of distension, load and oppression of the stomach, clammy mouth, white or yellowish furred tongue, thirst and urgent desire for cold acidulated drinks, lassitude and

restlessness, attended occasionally by yawning and pandiculation, pains in the back and lower extremities, preceded, or rather followed, nearly always by chilliness. The last symptom, indeed, is among the most uniform. The attack having formed, the circulation becomes slow and tolerably full, or the reverse, quick, and very diminutive and feeble, according to the degree of reaction and the tissue affected.

Gastric pain prevails, usually burning, though sometimes lancinating or spasmodic,—soreness on pressure of the epigastrium, which latter, however, is not uniform. Cases, on the contrary, are of frequent occurrence where this tenderness is wanting, and the pain is referred, in some instances, to the region of the liver or spleen, or even to the chest. Deep sighing attends, with great irritability of the stomach, nausea and vomitings, especially when anything is swallowed, sometimes of bile, though more usually of a glairy fluid, brought up rather by retchings than vomitings, with cardialgic sensations. Dysphagia is an occasional event, and, also, a sensation similar to the globus hystericus, or as if a round body was rising up, and compressing the lower part of the chest, relieved temporarily by puking. Constipation or diarrhœa now and then exist, and extreme anxiety, jactitation, and distress constantly so.

Continuing this way for a short period, an increased prostration of power ensues, and the pulse is small and contracted, or weak and irritated only, the skin warm and dry, or cold and damp, with the tongue soft, flaccid, white, or milky, or loaded in the centre and at the root, with brownish fur, while it is clean and florid at the point and edges, or the whole epithelion is removed, as if by a scald. The brain, in some instances, is much affected, as indicated by delirium or tendency to it, and by a considerable alteration of countenance, having the expression either of fierceness or dulness, with the eyes injected.

To this state, speedily succeeds still further aggravation of these symptoms, and particularly of muscular weakness. Disposition to syncope is now common;—the pulse is nearly imperceptible;—the extremities cold;—the whole surface pale, flaccid, and dewy;—the countenance lank, singularly haggard, or even ghastly, or bloated, and may be of a leaden or bronze aspect, with confusion of the senses and mental faculties, or low muttering delirium, with nervous tremors, subsultus tendinum, or convulsions;—the epigastric and lower abdominal regions so distended as to amount to meteorism, hiccup, and occasionally discharges, by a sort of spasmodic effort of the stomach, or diaphragm of dark flocculose or granulated matter, or of blood, pure or little altered;—the tongue being red, dry, and polished throughout, or heavily incrusted, with the lips, gums, and teeth coated by thick tenacious sordes.

This is the tenor of the disease when highly aggravated,—the latter symptoms seldom occurring excepting in the febrile form of it. As previously intimated, however, great are the diversities in this respect, as well in kind as degree, from extreme mildness and simplicity to the utmost violence and complexity. It sometimes happens that, among the secondary or adventitious affections, in addition to those of the brain and spinal marrow just noticed, the hepatic and pulmonary organs become implicated, and may be to such an extent as completely to mask the original disease.

From the wide spread associations of the stomach, there is scarcely, indeed, any portion of the system that may not be engaged, and evince its sufferings. Gastritis, moreover, is sometimes nearly or entirely concealed

by some anomalous affection, arising from an illusive sympathy as it is called. Thus it has been most prominently indicated by pain in the ball of the great toe, or in the groin, or in the pudendum, as witnessed by myself. Examples are reported of its chiefly appearing as rigidity of the muscles of the arm, or of more general tetanus, or palsy, or hydrophobia, or, at least, with aversion to water, difficulty of deglutition, extreme nervous sensibility, intolerance of light, or noises, &c.

In the *Edinburgh Medical Essays* a case of gastritis is recorded by Innes, the author of the work on the muscles, in which every symptom of hydrophobia was present, and, in our yellow fever, a malignant gastritis, the same condition was frequently observed.

Nor is it less true, that the disease may prevail in the highest degree, without any manifestation whatever of its existence. This has been claimed as an original discovery in our pestilential fevers. Consulting, however, the writings of De Haen and Stoll, I find that each gives examples of even gangrene of the stomach, where there was not the slightest evidence of gastric affection. The former, that is De Haen, considered it as a question of such perplexity, that he places it with a view to the exercise of ingenuity in his chapter "*De Problemata et Difficultates.*" Nor was the fact unknown to Cullen, who says "that it appears, from dissection, the stomach has often been affected with inflammation, when neither pain nor pyrexia had before given any notice of it." Frank has more recently made the same remark.

That the stomach should sometimes conceal its complaints is not more extraordinary, than its being done by other organs. The liver, the lungs, even the brain itself, disguise their lesions in the same way.

Causes.—In assigning the causes of gastritis, I scarcely know what to omit, so variously is it produced. Most frequently, perhaps, is it to be directly traced to the poisons, strictly so called, which, however, as previously intimated, I shall, at present, exclude from consideration. Yet there are other deleterious matters that prove a prolific source of it, as acrid, crude or stimulating, or too abundant alimentary ingesta, solids or fluids, or offensive, irritating, vitiated secretions in the cavity of the stomach. It may be also brought on by the variations or excesses of temperature, by miasmata, or other effluvia of different kinds, particularly from animal decomposition, and by all those circumstances, in short, to which gastric fevers are referred. On other occasions, it follows mechanical injuries, as blows or falls, and may be induced by eruptions, acute or chronic, not coming out, or being repelled, or by misplaced or retrocedent gout or rheumatism. Moreover, it is not unfrequently excited by rage, horror, grief, anxiety, vexation, or other moral influences of a perturbating or depressing nature. Besides which, as before mentioned, from the multitudinous relations of the stomach, it is peculiarly liable to sympathetic or secondary affections of this nature.

Diagnosis.—To distinguish the one variety of gastritis from the others is not very easily accomplished. As a general guide, we may advert to the characteristics of the inflammatory process as modified by the tissue in which it is seated. Existing in the mucus or cellular coats, the pulse is soft, the pain dull, or perhaps it may be only a sense of heat or burning;—the tongue slightly furred and clammy, or thickly coated in the centre with florid tip and edges, and the brain more or less affected: in the muscular, spasm predominates, and the pulse is small, corded, and accelerated;—the

tongue being charged by a covering of white fur, while in the peritoneal, with nearly the same states of the pulse and tongue, it is chiefly distinguishable by sharp, lancinating, diffusive pain.

But though, for the most part sufficiently characteristic, these signs cannot be uniformly trusted, they receiving modifications from the nature of the cause, the degree of intensity of the phlogosis, the extent of complication and other circumstances.

Gastritis when well developed, can readily, for the most part, be discriminated from other diseases. The signs, however, hitherto considered as most characteristic of it, nausea and vomiting, a sense of heat or burning in the viscus, with intense thirst, tenderness of the epigastrium on pressure, and a florid tongue, are equivocal or fallacious, and the latter two especially. Examples of actual phlogosis occur, in which no tenderness can be detected,—this oftener, though not always, happening where there is extreme obesity, the stomach being so protected by a cushion of adipose matter over it, that the effects of pressure, or even punching, do not reach it. Conversely, such is the sensibility of some attenuated persons, that they will flinch, and complain of pain in a perfectly healthy condition of the organ. Not tediously to extend this critical analysis to all the signs enumerated, I have to remark in relation to the tongue, that some of the highest of the French authorities seem to attach scarcely any importance to its indications. By Andral we are told, that no constant relation can be established between its appearances and the states of the stomach—that the one is often entirely natural when the other is greatly diseased, and contrarily it may manifest every aberration in the soundest ventricular condition. Louis affirms that whatever may be the aspect of the tongue, it has no concern with the disorders of the stomach, it exhibiting the same appearances in the most opposite states of the viscus, in the healthy and depraved, and indeed declares, that in those instances where the "mucous membrane presented the greatest sufferings, the tongue was unaffected." The preceding conclusions were chiefly derived from the examination of gastric fever. But Piorry asserts, that "in numerous instances of pure gastritis, the tongue continues pale." No doubt such is the fact, and while I admit, generally, that the indications of the tongue have heretofore been too implicitly relied upon as criteria of gastric disturbance, I am not prepared to go to the extent of coinciding in the decision of the writers whom I have cited. This seems to me precipitate and indiscriminate, partaking largely of the character of ultraism which belongs to the school of Paris.

The most common aspect of the tongue, in the beginning of acute gastritis, whether it be local or in connection with fever, is, according to my own observations, that of milkiness of tint, with flaccidity, and, in the advanced stage, should the case become typhoid, of an encrustation of dark sordes. Floridness seldom occurs in acute attacks, except they be induced by acrid or corrosive poisons. But in chronic phlogosis of the stomach, if of severity and lengthened duration, it is very commonly to be seen. Nevertheless, as stated by the French writers, it is undoubtedly true, that the tongue frequently remains totally unaltered in the most exasperated gastritis. Especially does it happen in yellow fever, of which I have known hundreds of instances, and was always a symptom of evil import, so much so, that it became a saying that "with a natural tongue, death was inevitable in that disease." On the whole,—of the signs of acute gastritis, the least uncertain, in my opinion, are deep sighing, extreme jactitation and

restlessness, tossing of the arms, stripping the breast naked, rolling or tossing about the bed, wild injected eyes, and tendency to, or actual delirium.

The disease most closely resembling gastritis, is phlogosis of the small intestines, particularly of the duodenum. But here, in a practical view, we need scarcely encounter the trouble of an investigation to determine the point. They, indeed, usually co-exist, and whether separate or united, essentially the same management is to be pursued. More easy is the discrimination from hepatitis and the pulmonary affections, and the means of doing it will hereafter be given. Not a little difficult, however, is it as to cerebral phlogosis, whether the one or the other be primary or secondary;—for such is the intimate consent between the brain and the stomach, that they are singularly prone to reciprocate their distresses, and as influencing the treatment, it is important to establish the diagnosis. Much may be learnt from a careful inquiry into the history of the case, its mode of production, the early appearances, its progressive development, and the actual condition. Beginning with chilliness, followed by unequivocal gastric disturbance, and this maintained throughout with, at the time, tenderness of the epigastrium, the peculiarities of the tongue already noticed, sighing and extreme inquietude, and a tossing impatient sort of restlessness, we may pretty safely infer, that the stomach is mainly and primarily concerned. Being sympathetically disordered, it commonly, or perhaps invariably, exhibits less force in these symptoms, and the aspect altogether is more that of irritation than positive phlogosis.

Prognosis.—The grounds of a favorable prediction are derived from an improved pulse, warm moist surface, cessation of gastric irritation, cleaning of the root and middle of the tongue, abatement of the floridness of its edges where such have prevailed, subsidence of cerebral and nervous affections, and restoration of general tranquillity. But the reverse may be supposed to take place where the abdomen is distended, cold skin, feeble circulation, collapsed or bloated countenance, deep sighing, singultus, and, above all, discharges of dark matter upwards or by the bowels.

Anatomical Characters.—It being of great importance in several views to determine the signs of gastritis, let us, as a prerequisite, ascertain the healthy appearances of the stomach, and particularly of the mucous membrane. This is usually of a dull or dingy white, or slightly rosy colour, with a velvet-like surface, covered by a small quantity of mucus, slightly adherent. It is rather thicker towards the great extremity or fundus, and at the small curvature, and presents in approaching to, and especially at the pylorus, a thickness not found in any part of the digestive tube. Before its arrival at this point, it forms irregular wrinkles, very prominent when the stomach is folded upon itself."*

Externally viewed, the stomach, on dissection, is sometimes found distended, or irregularly contracted. The latter circumstance, however, is not conclusive of inflammation, as we sometimes find the pyloric portion especially, reduced by contraction, to the size of a small intestine, when apparently in a healthy state.† Generally, perhaps, in other respects natural, it may be phlogosed, even to the exudation of lymph. On opening the stomach, we shall perceive its surface covered by a glairy, limpid matter, like the white of an egg, or more thick and glutinous, interspersed with coagulated lymph, which renders it so tenacious as in some instances to resemble a

* Penn on the digestive mucous membrane.

† Andral.

false membrane. On other occasions it is nearly serous, or it may contain blood either thin or grumous, or variously altered, even to the condition of what is called *black vomit.* These effusions being scraped off, the mucous coat is brought distinctly into view, which exhibits sometimes, though rarely, a diffused redness of several hues, from that of a deep vermilion to a greenish or purplish or brownish lividness, particularly conspicuous at the cardiac and pyloric orifices. This brownish tint, denoting the most intense phlogosis, is suddenly induced, especially by the corrosive and other poisons, and announces the commencement of disorganisation.*—Much more frequently, however, does it happen, that the redness follows the course of the turgid vessels, and is arborescent or streaked, or the surface is stellated, or patched, either florid or of a dark ecchymosed aspect, proceeding from infiltration of blood into the substance of the membrane itself, at which points it is thickened or swollen and softer. Dispersed over the surface pimply or pustular-like appearances are observable, owing to the phlogosis of the cryptæ or mucous follicles, in some instances, though rarely in acute gastritis, even ulcerous. Gangrene is scarcely ever met with, and as seldom erosions, except where acrid poisons have been taken. It is then very common, should life be protracted for two or three days,† though it may take place very promptly. More common than these appearances, is softening of texture to some extent, or, as has been noticed, it is rather firmer than natural. These are the phenomena in the mucous tissue. The other coats are not so usually affected, with the exception of the submucous cellular texture, which is very often highly injected. But the muscular tissue is occasionally softened, or simply florid, or contracted from spasmodic irritation only, and the peritoneal covering, with the appearances already noticed externally, has sometimes its texture so fragile as to be readily lacerated. In some few cases, the whole of the membranes are reduced to a sort of pultaceous mass or *bouillie*, the parietes yielding to the slightest traction, and are readily mashed by rubbing between the fingers.‡ This softening of the mucous coat particularly, may be very quickly induced, having been found in this state in fifteen minutes in a dog to which corrosive sublimate had been given.§

Extraordinary as it seems, there can be no doubt, that not the slightest traces of inflammation can be sometimes detected, when every assurance by symptoms had been given of gastritis. Facts of the kind were frequently remarked in our yellow fever, and have been noticed under other circumstances.

The phenomenon is, perhaps, susceptible of different explanations. It may be ascribed to the retraction of the blood from the capillaries, by the act of death, as happens in the skin, when inflamed by the exanthemata, and also in the serous tissues, the peritoneum or pleura, of which some striking examples are recorded—or it may be referred to the emptying of the vessels by the copiousness of the effusions. Confirmed in some degree, is the latter hypothesis by the consideration, that in the pestilence to which I have alluded, whenever an excessive excretion of black vomit took place, no phlogosis was observable. To more common cases of gastritis, there are equally incident sanguineous, serous, and other exhalations, which may be productive of a similar effect. Nor is it improbable that it is sometimes owing to such an overwhelming impression from the

* Andral. † Andral. ‡ Andral. § Brodie.

operation of the cause, as to prevent inflammatory action, though otherwise, the organ may fatally suffer, as in the case of prussic acid, &c., or to the disease of the stomach having entirely ceased by a translation of it to some other part, particularly the brain.

Conversely it is shown, by a series of examinations, that the stomach is peculiarly liable to certain appearances of phlogosis in cases, where it could not possibly have been in this condition. The fact seems not to have been unknown to Boerhaave and Morgagni, as regards at least, those who die asphyxiated, and of which we have now, an absolute demonstration from the carefully conducted experiments or observations of Andral, Billard, &c. But attention was more immediately directed to the subject, some years ago, by Yellowly, of London, in consequence of a report, that he found very generally in instances of sudden death, where no possibility of previous disease could have existed, the stomach was very apt to exhibit its vessels in a state of great turgency, either florid or dark-coloured, and sometimes with the wide spread suffusion of inflammation, and some extravasation of lymph. These observations were first made on malefactors, soon after execution, and subsequently on persons drowned, or quickly killed in any way.* In a man who hung himself in this city, the stomach presented the same phenomena, though in one drowned, there were no such appearances. These latter dissections were conducted by the late Dr. Lawrance, one of the demonstrators of anatomy to our School.

It is further to be remarked, that under some other circumstances, the stomach presents a similar aspect. Experiments† seemingly made with accuracy, demonstrate, that animals bled to death, uniformly have the mucous coat of this organ, as well as other tissues, in this state of turgescency, and from what I have seen on various occasions, I am inclined to suspect, that it is of more frequent occurrence than has been supposed, especially in exsanguineous, and other enfeebled conditions. The serous capillaries here, as in passive hemorrhage, lose their vital properties, or what Bichat terms the contractility of texture, by which they are rendered incapable of resisting the intromission of red blood, and passive congestion, of a florid or livid appearance ensues. Moreover, it is quite certain, that certain lesions of other organs, by the prevention of the ready return of the blood from the stomach to the cavities of the right side of the heart, are productive of a similar effect. Nor is it less determined, that these appearances, are sometimes the result of the act of dissolution itself, or occur subsequently, by the gravitation of blood, or its transudation through the vessels into the membranous textures, or by the imbibition of extravasated blood.

In several views it is important to be able to distinguish the counterfeit from the real characteristics of inflammation, and which is especially so as relates to questions of medical jurisprudence. Called into courts of justice to give evidence involving the life of an individual, on a charge of poisoning, the facts which I have disclosed should induce the utmost care and circumspection. Let it always be recollected that the stomach may simulate inflammation whenever death suddenly takes place as well as under other circumstances.

Notwithstanding the regard which the subject has attracted, we are still not sufficiently informed to enable us, perhaps, to establish uniformly a

* Yellowly, Med. Chir. Trans. vol. iv. pp. 380, 387.

† Seeds and Kellie.

precise diagnosis. It may be, however, generally stated, that in actual phlogosis, in place of diffusive redness, which occurs so rarely that it has been even denied altogether as a test of inflammation, being rather the result of imbibition, it is in streaks or arborescent, and especially dotted, either very florid or of a slate or brownish colour. This last, or the stellated appearance, is, indeed, held as the pathognomonic sign of common gastritis, and when attended by thickening of texture at certain points, with extravasations of thick tenacious mucus or lymph, may be deemed nearly conclusive of the fact. Excited, however, by acrid poisons particularly, though where the phlogosis is very intense the same effects may be otherwise induced, erosions or softenings are additionally met with: while, on the contrary, in the pseudo cases, we have the wide-spread floridness, or patches of livid ecchymosis, or little more than turgid vessels, florid or dark, without effusions, except sometimes that of blood, and these phenomena unaccompanied by any material alteration of structure. Even erosions and softenings, however, are not too hastily to be assumed as tests of inflammation. We are now fully aware that such changes, to the complete perforation or destruction of the stomach, in one or more parts, may proceed from its own solvent fluids, independently of any co-operation of disease. From the previously well ascertained properties of these fluids, this, which might have been presumed, is now indisputably settled by the observations or experiments of Hunter, Spallanzani, Burns, Carlisle, Cooper, Adams, Wilson Philip, Bretonneau, Trousseau, Taylor, &c., on the human subject, or brute animals and fishes.

Concerning simulative inflammation of the stomach, some other circumstances are worthy of notice. If the red coloration arises from congestion simply, it is mostly of a darkish hue, the vessels greatly distended, with often the aspect of ecchymosis, or of petechiæ or vibices, or there is an extravasation of black blood, grumous, or more or less dissolved. When, owing to imbibition, it is merely a stain, to be removed by washing or maceration. Caused by gravitation or settling of the blood, it will be seen in the most dependent parts only. Despite, however, of the foregoing or other criteria, it must be confessed that it is extremely difficult, and perhaps impossible, satisfactorily to discriminate inflammation from analogous states under all circumstances.

In most cases of sudden death, and particularly in those I have referred to, it appears sufficiently, that it is occasioned by asphyxia, which state we know, independently of the direct evidence of Bichat, from actual inspection, produces fulness of the capillaries. Why this happens oftener and more prominently in the stomach, as is represented, probably proceeds from its being the *ultimum moriens*. Haller states that vitality is sensibly retained in it, and the small intestines, when extinct in every other part. Conclusively, however, the late experimentalists have observed, that in opening living animals, for the purpose of their physiological investigations, they uniformly perceived the stomach to become a centre of fluxion—its vessels filled, and its surface reddened, or darkened, exactly in proportion to their struggles. No structure, indeed, is so prone to assume these appearances as the alimentary canal. During chymification, the stomach has been proved to be red, or turgescent, from an augmented flow of blood to it—the same condition is presented by the duodenum, when it is engaged in the digestive process, and by those portions of the large bowels, where fæcal matters accumulate and for a time are detained. (Andral.)

As to the appearances in those affections, by which gastritis is compli cated, I have to remark that in some of the most violent of them, no lesions whatever are to be detected on dissection. This was often exemplified in our yellow fever, and cases are reported by Andral of very severe delirium, and tetanus, where neither the brain nor spinal marrow exhibited any injury. The same has been noticed as to the lungs and other organs, which had apparently suffered greatly. Yet sometimes it is the reverse, and especially when the secondary or consequential affection became decidedly predominant, it here having assumed so large a part in the disease that such derangements as might be supposed are found, and the stomach very often correspondently betraying a mitigation of or entire exemption from injury.

Pathology.—In the progress of this discussion, so much has already been said of the peculiarities of gastritis, and its leading phenomena so amply expounded, that its pathology might be understood without any further elucidation. The distinction between it and gastric fever, consists mainly in the one being local, and the other so wide a sympathetic extension of the irritation, as to embrace and disorder more or less of the system, and especially that of the capillaries, which last is the essence of genuine fever. It is a fact too interesting not to be pressed on attention, that the tendency to diffusion, in this case, is in the inverse ratio of the intensity of the primary phlogosis.

Treatment.—Entering on the cure of gastritis, it may be proper to state, that I shall have regard only to the affection excited by the more ordinary causes, such as requires no antidotal or counter agency for its relief:—the latter instances appertaining to the specific poisons will be disposed of in another place.

First and mainly of the active form of the disease. The principle on which the management of the case I have now in view should be conducted is obvious, and the means are few and simple. It is an inflammation of rapid progress, in a delicate organ, and hence we are to apply, without delay, our most efficient remedies. No one will dispute the propriety of venesection. Disregarding the state of the pulse, or general prostration of power unless it amounts to absolute collapse, we must deplete freely or sacrifice life. This precept applies to the early stage of the case, and when induced by the common causes. Excited by certain depressing or poisonous agents, or, where it is advanced, venesection should be more cautiously adopted. The distinction is important. Being persuaded, however, that phlogosis really exists, though from its *suffocated state* not manifested by the usual signs, the practice must be bold and decisive. Twenty ounces of blood may be taken at once, provided there is considerable reaction, and the operation will probably be required to be repeated several times to a greater or less extent in the more inveterate attacks, and especially when the muscular and serous tissues are also involved. As we deplete, the powers of vitality are developed, and, consequently, the case assumes a more open and manageable shape. Cullen speaks confidently to this point, and the propriety of the practice is supported by general authority.

Next in importance is topical bleeding by leeches or cups. It is not easy, indeed, to appreciate their utility at this period without an absolute experience of it. Depletion in this way is sometimes also required to be repeated several times. Cold applications to the region of the stomach may be serviceable, though, in other and more frequent instances, warm

fomentations answer better. These are to be succeeded by a blister. Thus it is we subdue inflammation, and quiet the irritability of the organ.

As to medicine at this stage, it were well, as a general rule, to abstain altogether from its use. For the most part, it serves only to exasperate irritation, and frustrate the great purposes in view. Let the stomach itself be as much as possible at rest, and, where the remedies mentioned do not restore it to tranquillity, the warm bath and anodyne enemata may be employed. No small advantage, too, will be gained by stimulating the lower extremities by sinapisms, and even warmth to them in any mode procured is not devoid of effect. Medicine being ventured on at all, it should be some one of those mild articles formerly enumerated as calculated to allay gastric irritability. An apprehension of offending the stomach, induces a forbearance of purgatives. Evacuations, however, may be had by injections, and when the intensity of the phlogosis is overcome, then laxatives can be safely directed.

It has been recommended in these cases to pour down very freely the demulcent beverages. Except in the instance of acrid poisons, from which analogy the practice was borrowed, no advice could hardly be more pernicious in the early stage of common gastritis. They annoy the stomach, and keep up vomiting. Better is it to allow drink moderately. Thirst is more effectually thereby allayed, and the stomach remains undisturbed.

Toast water, barley or gum water acidulated, or lemon or orangeade are the most appropriate. Cold water rendered more so even by ice, or small pieces of ice itself, held in the mouth, and slowly swallowed, however, answer better, and are highly relished.

As the disease advances, and the signs of sinking supervene, or earlier, where the case presents primarily a very congestive or typhoid state, another description of remedies is demanded. Commencing with the milder stimuli, our chief reliance will soon have to be reposed on the carbonate of ammonia, or the spirit of turpentine, aided by the ordinary external stimulating applications. Turpentine seems to be equally adapted to this condition of the case, whether it be seated in the mucous or serous tissue. It in a very extraordinary degree controls the reduced states of inflammatory action, as well as relieves the congestive states of the former membrane, and we learn that it has manifested an equal effect over those of the latter as in peritonitis. But though prescribed by some, even in the height of an inflammatory attack, this is a practice I would not imitate, and, indeed, must condemn. It is at the period where the activity of the phlogosis ceases, and vital energy seems to be very languid, that it becomes proper, and then it is among the most valuable of our remedies. When muscular inflammation is mixed up with the case before us, the principal difference in the cure regards the use of opium, alone or combined with calomel and ipecacuanha, to reduce spasm and allay pain as well as to overcome the phlogistic irritation.

This is the treatment of simple gastritis. Complicated, however, as it may be by the engagement of other structures, even to the assumption of the character of well marked fever, I need scarcely say that, under such circumstances, the mode of cure is correspondently changed, so as to be accommodated to the varied condition. But to consider the subject in this light here, would be out of place. I will, therefore, only remark, that the general or constitutional disturbance is mostly the mere effects of the topical lesion, and that, while directing attention to the relief of the former,

we are never to be diverted from the latter as the source whence the secondary mischief proceeds.

Gastritis is laid down, by many of the authorities on the subject, as a rare disease. Even some of the latest writers so consider it. Thus Abercrombie declares, "that as an idiopathic affection, except from poison, it is very seldom to be met with, and scarcely less so, when organs most nearly connected with the stomach have been influenced in the highest degree."

But I have reason to believe that this is a mistake, owing to careless or inaccurate observation. Exposed as the stomach is, directly and through the medium of its infinite sympathies, with every part of the body, it is peculiarly liable to morbid influences, and can scarcely escape from frequent inflammations. Examinations of a more recent date, abundantly confirm the conjecture. Never have I seen opened a case of autumnal fever that such appearances were not exhibited, and, on account of the universality of the occurrence, many of the late French pathologists have been led to suppose, that these fevers are really dependent on gastro-enteric phlogosis, in conformity with the views long before entertained by myself.

II. *Chronic Gastritis. Symptoms.*—The chronic resembles in its general character, the acute state of the disease. As it is usually presented, epigastric uneasiness is first complained of, which is a sort of tightness extending across, from one side to the other, down to the hypochondriac regions, particularly the right one. This uneasiness may be continued, or intermittent, though it is always revived, and becomes aggravated by eating heavy indigestible articles of food, and perhaps, still more, by stimulating drinks. The pain in the stomach itself, is usually circumscribed to a spot, and which may be acute, or merely a dull ache. There is also, occasionally, a sensation, compared to the pressure of a ball against the diaphragm, and in other instances, as if a bar were fixed across the stomach, preventive of the passage of every thing into it. The tongue at this time is slightly furred, and the appetite capricious. Mostly an aversion to food prevails—sometimes, however, otherwise, it being eagerly desired. Cold drinks are very grateful, and as it were, instinctively taken. Digestion is not well performed, and the bowels are torpid. Great inquietude exists, both of body and mind, expressed by some indefinite phrase of wretchedness. The sleep is broken and disturbed by morbid vigilance or unpleasant dreams. Even at this early stage, there may be, though not usually, a diminutive, hectic, irritable febrile movement, denoted by alternate chilliness and flushes; dry skin, heat in the palms of the hands, and soles of the feet; with diminished or vitiated secretions.

Evidence of topical phlogosis, progressively becomes more unequivocally developed, by an exasperation of the preceding affections. Complaints are made of pungent, burning pain in the stomach;—there is tenderness of the epigastrium on pressure, in some instances exquisitely so, while in others, it is scarcely sensible, attended occasionally, by a feeling of constriction of the throat, difficulty of deglutition, short breathing, and dry cough. The tongue is now heavily covered in the centre and root, having its edges and tip florid and polished. Yet it may be clean throughout, moist and red, resembling raw flesh, or a dissected muscle, with its papillæ elongated. Cases too, occur, where it is merely dotted by red specks, or covered with a dry coat of mucous especially at the root. But though some of these appearances are generally present, I have seen the tongue

remain throughout in some severe and protracted attacks, very slightly or not at all changed. Digestion ultimately becomes exceedingly depraved, every meal producing painful oppression, accompanied by flatulence, or sour or fœtid eructations, the thirst often intense, craving the indulgence of cold water, or acidulated drinks;—and vomiting invariably takes place, from offensive irritating ingesta which are thrown up alone, or slightly mixed with glairy mucus, though occasionally, hematemesis occurs, and the discharge of blood is sometimes very copious.

Constipation is the habit of body, now and then, however, interrupted by diarrhœa, the stools indicating, for the most part, an absence of healthy biliary secretion and the urine variously vitiated. More continued, as well as higher is vascular excitement, the pulse being pretty constantly quick, firm, and corded, and towards evening, a distinct paroxysm of fever is manifested.

The case in this way marches on, till it leads to a most deplorable condition of things. Contemplated at its height, the general aspect, betrays those changes which are wrought by the ravages of inveterate disease. Extreme emaciation exists;—there is great loss of muscular strength;—the skin sallow, or leaden, and husky, adhering as it were to the bones;—the countenance altered by haggardness;—the eyes sunken and turbid, and the mind, which throughout had been feeble and dejected, or petulant and morose, may now be depressed into imbecility or harassed by all sorts of afflicting hallucinations, or errors of the imagination. Every supply of sustenance being cut off by vomiting or suspension of the nutritive processes, the powers of life rapidly waste, till absolute exhaustion finally closes existence.

As delineated, such is the graver character of the disease. But it is varied, as well in relation to the force, as kind of symptoms. Numerous cases of it are infinitely milder, while on the contrary, it may be even more distressing than I have described it, when it assumes the state of ramollescence, or of common ulceration, scirrhosity or open cancer, hereafter to be noticed. The disease, too, sometimes branches out and through the connections of the stomach, involves many other structures. An attack may extend to, or become concentrated in the liver or some other of the chylopoietic viscera, and is modified accordingly. Examples also occur, where, from the play of sympathies, the remoter organs are prominently affected, as the brain or lungs so deeply indeed, as very seriously to complicate the disease, or entirely merge it in themselves. These, however, are forms of it, which will claim my attention under another head.

Chronic may be the sequel of acute gastritis, or an original condition, resulting from a weaker, and more gradual operation of the same causes, and is sometimes superinduced on dyspepsia, &c.

Diagnosis.—Clearly as it is ordinarily designated, it might be mistaken for some other diseases, as similar states of the small or large intestines, the duodenum, or arch of the colon, especially. But here, it is comparatively of little consequence, as the treatment is essentially the same. It resembles too, some of the varieties of real dyspepsia, a mere functional affection, and equally so gastralgia, a chronic nervous irritation, from each of which, it ought to be discriminated, as it is managed differently. An attempt, however, to settle the diagnosis, must be postponed till these several diseases are reviewed, and their respective peculiarities described, without which, it were extremely difficult, or perhaps, impossible.

Leaving, then, this part of the investigation for the present, I shall

merely remark, that not so much is to be apprehended by thus confounding it, as from some of its obscurer forms entirely eluding suspicion, and that hence, care and vigilance should always be on the alert, to detect its existence.

Prognosis.—Taken in the commencement, the disease is usually cured without great difficulty. Neglected, however, till it becomes confirmed, it proves exceedingly obstinate, and in the ultimate stage, when structural derangements take place, except palliation, little can be effected, and death sooner or later is inevitable.

Anatomical Characters.—Excepting the organic changes, the anatomical characters are here very similar to those in the acute affection, varied by the gradation of violence and duration of the attack. The mucus coat of the stomach has been found intensely florid, though on other occasions exhibiting the several hues of purple or lividness, or of slate or brown, or its vessels very prominent, even appearing to be varicose, with its texture softened or hardened, thickened or thinned, in parts only or to a greater extent. Generally, however, it is softer and more attenuated at the large extremity, and thicker elsewhere, though there are striking diversities in this respect.

What are termed vegetations, are sometimes to be observed, by which are meant a luxuriant growth from the mucous surface, somewhat resembling the papillæ of the tongue, of a red or brown colour, concave form, and extremely soft. Not often occurring in the stomach, they, however, do occasionally, and Orfilla has described them as being very abundant in a case from the irritation of cantharides. More commonly do we meet with depravations of the cryptæ or mucous follicles, which are inflamed and so enlarged as to become prominent, with occasionally erosions of them, or simple ulceration of the tissues themselves, to a greater or less extent, and even scirrhosity and open cancer. These are the phenomena appertaining to the stomach itself. Nearly similar ones are incident to the small intestines, and the liver or the other chylopoietic viscera may be variously disordered, from the most trivial to the very worst and most destructive lesions. The same may be said of the lungs and the brain. But the latter do not frequently happen.

Pathology.—As identical, or nearly so, with that of acute gastritis, I pass over the pathology of the chronic condition without a remark.

Treatment.—Much of the treatment of the disease is equally applicable to some of the varieties of dyspepsia, and deferring all details till I reach that subject, I shall now deliver a mere summary only.

The leading indication is to arrest the case, by the prompt reduction of the phlogosis;—in the execution of which design we mainly rely on the detraction of blood. General bleeding is highly useful, where there is much vascular action and diffusive excitement, though never to be carried at any one time to a great extent. Eight or ten ounces of blood are the maximum, which may be repeated occasionally, so long as it shall be deemed necessary. Co-operating with this, a sufficient number of leeches or cups ought to be applied as frequently to the epigastrium, to draw away an equal quantity of blood. The value of local bleeding, under such circumstances, is so great, that unless there be the indications mentioned, it may be made to supersede altogether venesection. The point being attained for which depletion is required, a blister over the stomach, and from time to time renewed, or frictions with the emetic tartar or Croton oil, so

as to bring out a pustular eruption, prove very efficacious in eradicating any remnant of disease. Excepting to obviate constipation, and here the mildest laxatives, as castor oil or the Epsom salts, should be selected, all medicines may be withheld. It is true that the nitrate of potash, in very small doses, with gum-arabic, has been recommended, and though perhaps serviceable, I have rarely resorted to it.

In a more advanced stage, when the inflammation is unrelenting, with the same measure of reduction and counter irritation, minute quantities of the blue pill, in combination with ipecacuanha and opium or henbane, are eminently serviceable, as well for the purpose of soothing irritation, as by an alterative action, to subvert that of the disease by the promotion of the secretions.

Without, however, a duly regulated regimen, all remedies must be nugatory. Let the patient be made to observe, in the first place, a state of entire rest. Every species of motion, and of excitement, is studiously to be avoided, and his diet to consist at first exclusively of the demulcent beverages, agreeably acidulated, and next of the farinaceous articles. Continue this course for a few weeks undeviatingly, and a cure, in a large majority of instances, may be anticipated. But trespasses in eating, or in any other mode, never fail to revive or exasperate the disease, and our expectations as certainly will be disappointed.

III. *Organic Lesions of the Stomach.*—It is now proper to give a more distinct consideration to some of the severer organic lesions of the stomach, and among these, as claiming particular attention, are, softening of its texture, simple ulceration, scirrhosity, and open cancer. Chiefly the results of neglected inflammation, these afford solemn admonitions to a more vigilant attention than is ordinarily observed, in the early stage of the disease.

1. *Ramollissement.*—The first of this series is a most mysterious affection, in many instances. By Andral it was originally noticed, who has conferred on it the title of *ramollissement*, or softening. Though in the acute attacks it is marked by the phenomena of violent gastritis, it often, in the chronic form, steals on insensibly, in the guise of the mildest dyspepsia. There is, says the writer whom I have mentioned, "no loss of appetite, no pain, no thirst, no disturbance of the circulation. The patient only complains that digestion is more or less uneasy and imperfect, and he loses flesh and strength. But though thus mild, it steadily advances, till hectic irritation, and its ordinary consequences, are induced, and he sinks emaciated and exhausted." How far this representation of the case is correct, I pretend not to determine. I have seen several instances of the disease, demonstrated on dissection, where the symptoms had been infinitely more violent, and one case in which they corresponded exactly with the description recited. The membrane is softened in different degrees, sometimes, though less firm than natural, still consistent;—in other instances gelatinous, resembling thick mucus, or reduced quite to a pultaceous mass, or it is partially removed, leaving the subjacent cellular tissue naked, in patches of various sizes. This sort of degeneration is more apt to occur in the stomach than any other portion of the alimentary canal. But it does occasionally take place both in the small and large intestines;—and, in one case, I saw it to a great extent in the stomach, as well as in the rectum.

Treatment.—As long as the disease remains so ambiguous, the treatment of it must necessarily be vague and unsettled;—and all we can do is

to be guided by general principles. In the beginning, I should presume those means are called for which appease irritation or subdue positive phlogosis, and in the advanced stage, the muriated tincture of iron, in small doses, has been highly recommended, with little or no just claims, I am inclined to suspect, to confidence;—such changes of structure as are then proved to exist being irreparable. It is indeed absurd to suppose that the lost mucous tissue is ever replaced, though the fact is affirmed. Yet I cannot doubt, from what I have seen myself, that life may sometimes be protracted for a length of time, with no more discomfort than ordinarily attends inveterate dyspepsia, where a very considerable portion of the mucous membrane of the stomach had been removed. I recollect particularly examining, with Dr. Meigs, a gentleman dying of another and very acute disease, whose stomach and rectum presented such denudation, in large patches, evidently of a chronic character, who, for full twenty years before, had suffered uninterruptedly from gastric derangements and their concomitants.

2. *Ulceration.*—It sometimes happens that simple ulceration comes on while the individual is apparently in good health, with so few of the symptoms of gastric disorder as to excite no solicitude. Nothing more is complained of than in ordinary dyspepsia, and this condition may be protracted with now and then some aggravation, for a great length of time. The system suffering little, there is scarcely a sensible degree of emaciation, or diminution of muscular strength, though there may be perceived a change of complexion, it usually becoming leucophlegmatic, or sallow, more of the lemon than orange hue, or dingy, or saturnine. Exactly under these circumstances, I have known several instances to linger out for years, when all of a sudden, by an attack of violent vomitings of black blood or dark flocculose, or granulated matter in immense quantities, death speedily to ensue.

Taking the case, however, in its general character, we shall find, that after it has endured for some time, symptoms do arise indicative of established organic derangement. These are pain and heat, compared to the burning of a coal, more or less permanent, under the ensiform cartilage, extending in some instances to the hypochondric, and even the lumbar region, with vomiting sooner or later after each meal, at first aqueous, mixed with undigested food, and afterwards of a brownish fluid, which usually affords temporary relief,—gradual emaciation and loss of strength, till they become extreme, and with uniformly the alterations of the colour of the skin already noticed, the whole attended by considerable hectic irritation. Continuing to march on with progressive exasperation, the disease at length fatally terminates by the ulcer perforating the stomach, or by the occurrence of such vomitings as have been mentioned, the amount of which is sometimes hardly to be credited. In one case which I attended with Dr. Dewees, eight gallons were voided in three days, and in nine others that came under the care of myself, or with Dr. Physick, or Hodge, or Jackson, &c., the quantity was scarcely less.

Causes.—Generally, simple ulceration of the stomach has been deemed one of the sequelæ of chronic gastritis. Granting for the present the truth of this allegation, there are several other circumstances in the etiology of the affection which deserve to be noticed. This, however, I shall postpone till I come to the cancerous lesions of the viscus, these belonging to both conditions.

Diagnosis.—It is not so easy, as perhaps might be expected, to distin-

guish the present from some other gastric disorders, and especially in the early stage. Common dyspepsia resembles it, and some of its forms have really an identity of symptoms. Even the hematemesis of the advanced stage mostly, very characteristic, may be deceptive. Of its analogy to the cancerous affections, I am to speak presently.

Prognosis.—Except in the beginning, or when the ulceration is small, the disease, I think, may be pronounced nearly incurable. Nor at this most favorable moment, do our efforts or the natural resources often succeed. For the most part, the ulcer continues to spread, generally assuming a more malignant character, though in some rare instances it acquires, or has originally, a contrary disposition, and ultimately heals. Too many cases are recorded, with the unerring marks of cicatrices, to doubt the occasional occurrence of this event, among the most noted of which is that of the justly celebrated Beclard, who, after lingering under such an attack, recovered, and, subsequently dying of another disease, his stomach exhibited conclusive proof of the ulcer having been cured.

Anatomical Characters.—Commonly, on dissection, a single ulcer is discovered. Cruveilhier, who has paid great attention to the subject, says that such is almost uniformly the case. But this is denied by some of the authorities, who assert, "that they are not rarely double and even multiple." I have never known such an instance of multiplication. The ulcer, at first, is very analogous to the venereal chancre, having a hard retorted margin, is deeply excavated, and with a white or gray indurated basis, consisting of the peritoneal coat, which is thickened and more dense than natural. As it proceeds, however, it sometimes becomes phagedenic, or sloughing with ragged edges, of which I have seen several examples. It may occupy any position on the surface of the stomach, though most frequently situated in the great curvature or about the pylorus. It is of all dimensions and shapes—in the beginning not larger than a chancre, is round or oval, and has been found to have extended over half of the stomach. I have witnessed cases with Drs. Physick, Jackson, Hodge and Horner, through which the head of an infant might readily have been protruded. The figure here was irregularly circular, and with very unequal edges. By a continuance of the ravages of the ulcerative process, the whole of the tissues are sometimes removed, including the peritoneum, causing a complete perforation, through which the contents of the stomach escape into the abdominal or, according to Willis and Van Swieten, sometimes into the thoracic cavity, each of whom have noticed a communication of this kind. But against a catastrophe so immediately fatal, nature more commonly provides an adhesion with some other organ, forming a basis for the ulcer, thus closing the opening, and protracting life. Every case which I have witnessed, amounting to thirteen, had this provision, the adhesion being with the liver. But it has been detected with the pancreas, the spleen, colon, &c.

In connection with these more prominent phenomena, there has been remarked, phlogosis or congestion in other portions of the stomach, denoted by increased vascularity, general, or arborescent, or punctated redness, or an engorgement of the veins. Ruptures of the large vessels of the ulcers, from erosion, has been observed occasionally in hæmorrhagic cases. But a more common appearance is that of a number of vascular orifices sometimes so minute as scarcely to be perceived by the naked eye, through which the blood escapes.

Differing from all this, are the phenomena where recoveries have taken place by the healing of the ulcer. As the cicatrix forms, either by the

generation of a fibrous tissue, or the approximation of the edges of the ulcer, it presents a different aspect. The lesion being small, it is cured in the second mode, and is ragged, striated, or puckered;—and when large, in the first, and then is smoother, with a fibrous bottom, and a margin of cellular membrane. But we learn that sometimes the adjacent parts are so drawn together, as considerably to contract and deform the stomach, reduce the capacity of its cavity, and to have impeded its functions. The cicatrix, on the whole, in whichever way induced, has the appearance of that of a burn of the exterior surface of the body.

Pathology.—In commenting on the pathology of this affection, I have very little to say. The prevalent opinion, as previously stated, refers the ulceration to neglected or ill managed gastritis, and which, in its general application, may be just. Exceptions, however, exist, to the universality of the rule. The lesion has been frequently met with, where no indication of phlogosis had preceded its occurrence. Nor is it less true, that such a termination is not more incident to the active than the other states of gastritis. Granting the relation of the two conditions usually maintained as cause and effect, we must still seek for some peculiarity in the phlogosis to produce this event. Greatly inclined am I to suspect, that it receives a modification from some constitutional diathesis promotive of the tendency to ulceration, and without which, it would seldom take place. It may be further stated in support of this view, that in numerous instances ulceration is observable in the delicate and cachectic, of phlegmatic temperaments, perhaps more so, than in the robust and sanguine, with perfect integrity of constitution. The diathesis to which I have alluded, is unquestionably sometimes strumous, though at other times not so, and probably may be of any of the diversified descriptions comprehended under the indefinite phrase "bad habit of body." On this account probably, it is so often associated with drunkenness and gluttony, and such like depraving indulgences. We see cancer of the same organ dependent on a specific constitutional condition, and why may not the species of ulceration now under review, require also a general contamination of another kind for its production?

Treatment.—In regard to the treatment of this disease, so little can be accomplished, that it will not long detain us. Nearly by common consent, a regular medical course is abandoned as offering no prospect of success, and hopes are now chiefly reposed in the powers of nature, aided by a well devised regimen. Thus, I have understood, was the memorable cure of Beclard accomplished, and which doubtless contributed largely to confer reputation on the plan. Even in those instances obviously associated with conditions of system demanding rectification, as a prerequisite to the improvement of the local affection, a restraint is imposed on the use of the otherwise appropriate medicines of any activity, by an apprehension of injury from the introduction of such articles into the stomach. But this is carrying matters to ultraism.

Considering how much the gastric lesion is dependent on a general vitiation for its origin and maintenance, surely common sense dictates a resort to those means the best calculated to correct or do it away, and to which endeavour we are encouraged by the occasional proofs of the healing of the ulcer, on the restoration of better health. Guided by this principle, I have never hesitated to venture the cautious administration of remedies when I thought they held out the promise of utility. To indi-

cate these in detail, cannot be necessary, and it may suffice to state, that they consist of the means to which recurrence is usually had in cachexies, accommodating them to the varieties of such depravations of body.

As operating more immediately on the topical affection, and particularly adapted to it when actively inflammatory, bleeding by leeches or cups to the epigastrium, followed by blistering or other modes of counter-irritation over the same part, repeated from time to time, according to the exigency, is so decidedly efficacious, that it should never be pretermitted or neglected. An attention to the bowels, so far as to obviate constipation, and where enemata answer the purpose, they are to be preferred to laxative medecines. What else remains to be done, is little more than the palliation of distressing or painful symptoms as they may arise. Every thing, however, will prove nugatory, without the strictest regulation of regimen. As to diet, we are to be governed in some degree by actual experiment, selecting those articles that on the whole agree best with the patient, in which respect there is considerable difference, even in the same person, at different times. Certain precepts, however, are of universal application. The food is invariably to be light, of the easiest digestion, and as small in quantity as shall suffice to keep down the inordinate cravings of hunger, which in themselves irritating, are productive of exasperation, and with this intention, it may be oftener repeated than the customary stated meals. It is a common remark, that there is always most comfort in this affection when the stomach is empty, and that ingesta, solid or fluid, in the slightest degree heating or stimulating, are ill borne, however small the amount. Bodily exercise, except the gentle, is pernicious, and as far as possible, the mind is also to be kept at ease, the cares and anxieties, especially of business, avoided, and it recreated and amused.

From the fragility of the cicatrix, even when most perfectly formed, it should be recollected, that it is very liable to laceration by slight causes. Cruveilhier tells us, that he has known it to be done three times in the same individual at intervals of from two, to four years. Doubting this, it not being susceptible of positive proof, we have instances of ocular demonstration of ruptures. They have happened principally from vomiting, induced by offensive ingesta, or emetics;—and hence, the further propriety of guarding against these and other causes of such disastrous consequences.

3. *Cancer.*—Confessed as it is, that the cancerous lesions of the stomach, are in their symptoms, and indeed in most other respects, essentially the same as those of which I have just disposed, I shall, in order to avoid an unnecessary recapitulation, be content to refer with some few additions, to what has already been said. Nevertheless, the causes of this distemperature, deserve to be now traced out with some particularity. It seems, in not a few instances on record, to have been hereditary, so far at least, that a predisposition to it was transmitted from generation to generation to such an extent, as to have affected several of a family, of which, that of the Bonapartes affords a conspicuous illustration, the father, a son, and daughter, having died of it.

Nor, probably, has the sex less influence on its production, the male being more liable to it than the female, which, however, may be mainly owing to the greater exposure of the former to its exciting or accessary causes—such as gross feeding, intemperance, &c. Yet partly, the comparative exemption of women, is also to be found in their peculiar economy. The uterus and mammæ are so singularly prone to cancerous degenerations, that they

seem to serve as *diverticula* of the affection from other organs. Be it however, as it may, the fact of their immunity in this respect, corresponds with general experience. Of the many cases I have seen of the disease, only one was in a woman.

Even more, perhaps, does age predispose to the event, it seldom or never happening prior to puberty, or in old age, and is most usual somewhat after the meridian of life. Certain conditions of system have a further effect. More frequently do we meet with it in the cold phlegmatic temperament, or vitiated habits of body, than the reverse, or the ardent and sanguineous, or otherwise hale and robust.

Not a little curious is it, that the affection appears to be of wider prevalence at particular seasons, even to the observance in a degree of an epidemic character. During the month of April, 1832, I saw eight cases of it absolutely demonstrated by autopsic inspections, and such occasional occurrences, though not to an equal extent, have at other times been noticed by me, without any obvious reason for the phenomenon.

Causes.—The directly exciting causes of the affection are all those agencies which disorder the stomach, by inducing irritation or phlogosis of it, and I am persuaded, as well from the intimate consent between the brain and that viscus, as from what I have positively seen myself, that griefs, anxieties, mortifications, and such like moral influences, are not the least operative.

Combined with a most baneful climate, it seems certain, that the sad reverses of his once glorious fortune, exasperated by the wanton vexations to which he was so cruelly exposed during his captivity, developed, and envenomed the attack of the disease, in the late illustrious Emperor of France, of which he fell a victim, under circumstances, that cannot now, even at this distant day, be contemplated without exciting in every generous heart, emotions of sorrow for the peculiar severity of his fate, mingled with sentiments of unmitigated indignation against all those concerned in its accomplishment.

Diagnosis.—Mostly, and perhaps, exclusively, the affection is seated in the pylorus or cardia, and much oftener in the former than the latter position. Differing as it does in some of its features, when thus oppositely situated, it may be right to indicate the criteria of distinction. In the pyloric case, the food gets readily into the stomach, digestion is partially checked only, and some chyme passes into the duodenum to the last. Emaciation is, hence, comparatively slow. The cardia, however, being affected, the intromission of food, is in a great measure prevented, and the system thus deprived of nutriment, becomes correspondently exhausted. There is, too, in the first, vomiting, and in the second, regurgitation. Besides which, where the person is attenuated, and the pyloric tumour large, it may be felt, as I have known in several cases. But in cancerous ulceration of the body of the stomach, independently of scirrhosity of its extremities, if such really ever exist, which is doubtful, I am not aware of any sign of discrimination, entitled to confidence, either as regards simple ulceration of the viscus, or some other disease of itself, and its associate organs. The phenomena of scirrhus of the pylorus may be counterfeited by a similar state of the pancreas, and those of the cardia, by stricture of the œsophagus, or mere irritability of the upper passage of the stomach. From the examples of the latter, I have seen mistaken for cardiac disorganization, I shall select a case particularly interesting, which I attended in consulta-

tion with Dr. Physick. It was that of a gentleman from Virginia, sent to us for some supposed structural lesion of the cardia. For several months prior to our visiting him, he had been afflicted by a difficulty to get any description of food into the stomach. As soon as it reached the upper orifice, a violent revulsion took place, by which it was forcibly ejected. The easy introduction of a very large bougie, demonstrated that there was no mechanical obstruction, and by quieting the irritability of the part, chiefly by the daily introduction of the instrument, he speedily recovered.

Prognosis.—Need it be said that no expectation can reasonably be entertained of curing this cancerous affection in any of its stages. Early recognised, something may be probably done to stay its career, or to mitigate its severity, and such is the amount of our best efforts.

Anatomical Characters.—Its anatomical characters vary, according to the progress it has made. Death taking place in the first stage, the lesion will be detected of one or the other extremity to which allusion has been made. It is, I repeat, far more usual in the pyloric than the cardiac orifice, and a coincidence of it in both, I am not aware of any one having observed. When the former is affected, we are presented with various changes, from mere thickening and induration of the part, to a tumeroid mass of diverse dimensions and consistency. I have seen it as small as half an inch, and as large as two inches in diameter, confined to the pylorus, or extending, the change of structure at least, into the cavity of the stomach, or to the duodenum, or both. Cutting into this mass, it is found to resemble a section of a potatoe, at other times that of a turnip, or of the brain, or again is denser, more solid, almost cartilaginous, like real scirrhus, and hence the respective designations, *solanoid*, *napiform*, from the turnip-like fibrous texture, *cephaloid*, and *scirrhoma*, the last the most common. But it happens that these several varieties enter into the composition of the same tumour, occupying either distinct sections of it, or the whole intimately mixed.

In some particulars, the degeneration of the cardia differs. Nothing abnormal is usually to be perceived till the stomach is opened. Even then, instead of a tumeroid growth around the orifice, as in the other case, we find more or less narrowing of it, by the deposition of extraneous matter, which may be variously arranged, sometimes in the form of an annular stricture, sometimes in irregular masses, sometimes in mere thickening, condensation or induration of texture, and sometimes as a cauliflower fungus, hanging down into the ventricular cavity.

Cancerous lesions of the other portions of the stomach are held to be very rare events as primary affections. But essentially such as I have described as incident to its extremities, are said to have been observed, and still more confidently of late its liability is maintained to *primitive* cancerous ulceration, so called in contradistinction to that following antecedent scirrhosity.

Whatever opinion may be entertained on this point, it is clear that from the state of the orifice noticed, after a while, proceeds ulceration, seldom of any extent at the superior, and very widely at the inferior, even to the destruction of more than half of the stomach, many instances of which have come under my own observation. It is so analogous to simple ulceration, in its worst form, that were it not for the associate scirrhosity, it would often be impossible to distinguish the two, with any certainty. The account of the one may therefore suffice generally of the other condition.

Yet there are in some instances further criteria. Cancerous inflammation has little tendency to adhesion with foreign tissues or surfaces. It preys on the part which it seizes, till it is destroyed by the ravages of ultimate ulceration. But occasionally spreading from the stomach, it involves an adjacent organ, into which cancerous matter is deposited, causing the same sort of degeneration, and an imperfect adhesion between them may take place. This has been remarked with regard to the colon, pancreas, spleen and especially the liver.

Pathology.—My intention is not to dwell on the pathology of this affection. By such an inquiry, I should unavoidably be led into a discussion of the general doctrine of cancer, which would be here out of place. The subject, indeed, is one of much obscurity, and perhaps all that can be safely averred, in relation to it, is that the origin of cancer is intimately connected with the process of a vitiated secretion, of which the specific deposit destructive of organization, and its consequences, are the products. No further can we proceed in an explanation of the phenomenon, than, perhaps, the predication that certain causes, by operating on a peculiar diathesis, which, in our ignorance, is vaguely termed the *cancerous cachexy*, occasions the morbid secretion to which I have alluded. The production of tubercles in phthisis pulmonalis, affords a very striking analogy. Exactly like cancer, the foundation is there laid in a peculiar predisposition, which may be excited in a similar way into action, leading to the development of these adventitious masses, to end in not less fatal lesions. As regards immediately the affection of the stomach, it seems to be admitted, that it commences in irritation of the viscus. But of the precise nature of that irritation, whether inflammatory or otherwise, a considerable difference of opinion prevails. From all the cases I have seen, confirmed by the tenor of the history of the disease, I am persuaded that if phlogistic, it is a state of little activity, being rather of the kind and degree which appertains to an unsound body.

Treatment.—Determining the existence of simple scirrhus, all that we can do is to assuage pain by topical bleeding and blistering and anodynes, —to keep the bowels open by enemata or the milder laxatives, and restrict the diet to the bland vegetable mucilages. Every variety of narcotic and sedative, however, has been used, opium, hemlock, henbane, belladonna, stramonium, alone or combined with mercury or arsenic. The burnt sponge and the prepartions of iodine, have also been praised. But under the circumstances that these last remedies have been proposed, I should very much apprehend the case to be desperate.

Concerning open cancer of the stomach, I have still less to suggest. Existing in any part of the body, even when exposed to our senses, watched in all its fluctuations, and approachable to the direct application of remedies, we are aware of its indomitable nature. Concealed in the dark cavern of the stomach, one of the vital organs, what can we hope or expect from the impotent resources of our art? Of the numerous cases of this kind recorded, the most conspicuous is that of Napoleon Bonaparte, to which I have previously alluded. It was by this disease, a small ulcer in the stomach, that Almighty God decreed, after a series of preparatory humiliations, to extinguish the existence of one of the most eminent of created beings, seemingly to teach an impressive lesson of the dependence of our mortal condition on his will, and the perishable tendencies of all sublunary power, with its attendant grandeur, vanities, and glories.

MEDICAL EDUCATION AND INSTITUTIONS.

ART. IX.—*A Visit to thirteen Asylums for the Insane, in Europe, with Statistics.* By PLINY EARLE, M. D.

DURING a recent tour in Great Britain and on the European continent, I visited several Asylums for the Insane, situated either upon my route or in its immediate vicinity. In this paper I propose to embody the notes collected at those institutions, trusting that some of the ideas therein contained may not be entirely useless. When the visits were made I had no intention of presenting what might be gleaned by them to the public through this channel. And I now regret my inability, from a want of more copious data, to do that ample justice to the Asylums mentioned, as well as to the general subject itself, which they both deserve, and which the progress of our knowledge of insanity, and of the most judicious method of treating it, seem imperiously to demand.

When in London, I went to the "*Bethlehem Hospital*," that ancient and well known metropolitan institution, and was disappointed in learning that no one is admitted, as a visitor, excepting by special permission from one of the directors. An almost immediate departure from the city prevented me from obtaining such permission.

The Middlesex County Lunatic Asylum.—The Lunatic Asylum for the paupers of the county of Middlesex, Eng., is probably the largest institution of the kind in Great Britain. It is located at Hanwell, some fifteen or twenty miles from London. It went into operation in 1831. The very extensive building is erected upon three sides of a square, or rather of an oblong space, which, being handsomely planted in the style of English gardens, forms a front yard of attractive beauty. The principal part, or longest portion of the edifice, runs parallel to the road, which is, perhaps, one-eighth of a mile distant. The other two portions, as may be inferred from what is said above, run towards the road from the two extremities of the principal one. The three are of equal height and width. The central part of the principal one is expanded to a greater width, and is hexagonal in form. Within this are the offices and the apartments of the superintendents. A similar hexagonal portion exists in each of the other two, not, however, near the centre, but removed a short distance from their extremities. Large as was this edifice, it had proved inadequate to the necessities of the county, and, at the time when I was there, extensive additions were in progress. These consisted of two wings, one near the extremity of each of the two portions running from the principal building, towards the road, attached to these portions on the external side, or that opposite the oblong yard, and running at right angles to them. Hence they were parallel to the road and to the principal part of the building. The stairs

are in the hexagonal enlargements. The wards are divided into small rooms for dormitories, upon one side of a narrow entry or passage which runs from one extremity to the other. The cooking and the heating of the apartments, throughout the whole establishment, are performed by steam. The length of pipes for the last purpose is upwards of one and a half miles. The house is lighted by gas. The hours of meals are 8 o'clock, A. M. and 1 and 7 P. M. A pint of strong beer, *per diem*, is allowed to such of the patients as labour.

The most prominent characteristic in the internal economy of this institution is the amount of labour performed by the inmates. Perhaps no other Asylum of the kind can furnish so great a per centage of patients devoted to useful occupations. Of the *six hundred* who were there in 1837, more than *four hundred* were thus employed. Most of these were incurables. The cooking for all the residents at the Asylum, the brewing, washing, tailoring, shoemaking, and gasmaking, are all performed by the patients, there being, in each department, a sane person who acts as overseer. Carpentering, cabinetmaking, and some other trades, are also pretty extensively carried on. No accident has hitherto occurred from entrusting edged and other dangerous tools in the hands of the employed.

Sir W. C. Ellis, who, in 1837, and for several years previously had fulfilled the duties of superintendent of this Asylum, has recently published a work upon insanity, from which the following anecdote is extracted. It proves that he is gifted with a presence of mind, and a sagacity adapted to any emergency, and worthy of the man who has received the distinguished honour of knighthood in consideration of his skill in the management of the insane.

A workman at the Wakefield Lunatic Asylum left a chisel more than three feet long in one of the wards; a furious patient seized it and threatened to kill any one who approached him. Every one then in the ward immediately retreated from it. "At length," says the author referred to, "I opened the door, and, balancing the key of the ward on my hand, walked slowly towards him, looking intently at it. His attention was immediately attracted; he came towards me, and inquired what I was doing. I told him I was trying to balance the key, and said, at the same time, that he could not balance the chisel in the same way on the back of his hand. He immediately placed it there, and extending his hand with the chisel on it, I took it off very quietly, and without making any comment upon it. Though he seemed a little chagrined at having lost his weapon, he made no attempt to regain it, and, in a short time, the irritation passed away."

The Pauper Lunatic Asylum for the West Riding of York, at Wakefield.—This, like the Asylum just treated upon, is one of a great number of establishments erected in various counties throughout England, for the reception and treatment of those unfortunate people who, drinking a two-fold portion of the cup of affliction, are suffering under both abject poverty and mental alienation. It was established in the year 1816, and opened in Nov. 1818. Its whole original cost, including a farm of twenty-five acres, was eleven thousand pounds sterling. Extensive additions have since been made. It is pleasantly situated, about a mile from the town of Wakefield, and, when approaching it, is nearly hidden from view by the shrubbery and trees with which it is environed. The original form of the ground

plan of the building was that of the letter H. At either of the two points represented by the junction of the horizontal with the upright portions of the letter, there is an expansion of a circular form, constituting a kind of tower. Within these, and leading to the uppermost story, are spiral staircases, beside which there are windows communicating with the wards. Hence two persons, one upon each flight of stairs, can, with very little labour, oversee all the patients while they are in the wards. The wards, unlike those of some of the American Asylums, have dormitories upon but one side, the remaining space being occupied by an entry or hall. The bedsteads, like those of most public institutions in England and France, are composed of iron. The establishment is lighted, throughout, by gas, which, as well as the beer, bread, shoes, clothes, and cloth for external garments consumed by the patients, are manufactured upon the premises, and, principally, by the insane themselves. The medical superintendent, to whom all other persons in the house are subordinate, acts as secretary, treasurer, steward, surgeon and apothecary, and, in concert with the matron, has the general direction of the treatment of the patients, the domestic arrangements, &c. &c. In the medical department, however, he is subject to the visiting physician. Besides other records, he keeps a diary of casualties, or remarkable circumstances, and a medical journal, in which he places a history of every case admitted to the Asylum. He is obliged to visit every ward and see every patient at least once every day, and oftener if necessary. He carries a master-key to the wards and outer doors, and these are secured every night by himself, personally.

The matron, who has a salary of 100*l.* sterling, per annum, is subject to the director or medical superintendant, and, so far as, in the two departments, their duties are similar, is governed by the same rules and regulations. Aside from her duties to the patients, she has charge of the kitchen and of the neatness and propriety of the whole house. She is required to see every room and every female patient as often as once each day, and to secure all the doors in the female department at 9 o'clock, P. M. from the 1st of October to the 1st of April, and at 10 o'clock during the remainder of the year.

As many of the patients as possible are employed as servants, and the hiring and dismissal of other domestics is entrusted to the director. The cause of dismissal, when such cases occur, is always registered. The following extracts are from the "Rules and regulations for the management" of the Asylum.

"Any officer or servant found making a perquisite of any kind whatever, will be instantly dismissed."

"Any servant striking a patient will be instantly dismissed."

"It is now known, by actual experiment, both at the Retreat and the Asylum at York, that much work of various kinds may be done by patients, not only to the great profit of the institution, but also to their very great advantage, both in body and mind; therefore the director and matron will consider that they will not give satisfaction unless they have considerable success in this department of their duty."

Furthermore, in respect to officers and servants, if any one of them take any present, or gratuity, from any tradesman dealing with the Asylum, or from any patient or visitor, he is discharged. Any servant found intoxicated, or who has been known to sell anything to any one of the patients,

without the knowledge of the director, is reprimanded for the first offence and dismissed for the second.

The number of patients in the Asylum during the summer of 1837, was 334, of whom a small minority were women. Fifty or sixty of the men labour, regularly, either in the manufacture of the articles above mentioned, in gardening, or in some mechanical trade. All the utensils used by the patients at their meals, unless necessarily metallic, are made of wood. The working patients are furnished, besides their regular meals, with two "drinkings" during the day, each of them consisting of three-fourths of a pint of beer and four ounces of bread. Nearly two hundred dollars per annum is paid for tobacco, which is also divided among the labourers, each being entitled to a weekly ration of one ounce. Many of the patients, as we passed through the wards, begged us for tobacco, or for money to purchase it with. One of them, after having thus played the mendicant, put into our hands a piece of cloth, upon one side of which he had written, in large letters, "*Millennium. Green, blue and yellow united.*" And upon the other, "*Victoria 1st, July 28th*, 1837. *Virgin Queen of Peace. Amen. Aquila.*" It will be perceived from the date, that this was but a short time subsequent to the accession of Victoria to the throne of Great Britain. The universal popularity which the youthful queen enjoyed, at that time, among her sane subjects, seems to have been participated also by some of those who were insane. And this poor infatuated maniac beheld the "green, blue and yellow," the insignia of the different political parties of the realm, united through her means, and hence the "consummation devoutly to be wished, the immediate advent of the millennium! "Eh, eh," said he, after I had read the above, and, as he spoke, he looked up into my face with a piercing glance and a most significant smile, "do you know what Aquila signifies in English?" Being answered in the affirmative, "Well, Sir," he continued, "*I* am the Eagle," and he placed a most emphatic stress upon the pronoun, in order to give us an adequate idea of the dignity of his person.

Food.—The food is furnished by contracts, of three months each, which are made between the visiting justices and the contractors on the first Monday in January, April, July and October. The contractors for meat, bread, &c. at the time of the delivery of one parcel, take an order for the next. The meat and bread are delivered twice a week, on Wednesdays and Saturdays. For breakfast and supper the patients are furnished with a kind of pudding, made of the following materials, and in the proportions annexed, viz.—Milk, 1 gallon; water, 2 gallons; oatmeal, $2\frac{3}{4}$ lbs.; wheat flour, $\frac{1}{4}$ lb. For dinner, "Yeast dumplings with treacle-sauce, and boiled beef or mutton with vegetables, on Sundays, Tuesdays and Thursdays; 6 ounces of meat, free from bone, allowed to each patient." On Mondays, Wednesdays and Fridays, a soup made from the meat boiled on the previous days, and on Saturdays, beef-pie or Irish stew. Fifteen ounces of bread per day, is allowed to each person, and milk is furnished them, "as required," not exceeding one pint each per diem. The hours of meals are $8\frac{1}{4}$ o'clock, A. M. and 1 and 7 o'clock, P. M. throughout the year.

The women were supping when we went through their department, each eating her ration from a small wooden dish, similar to a pail. That air of neatness and comfort which reigns throughout the establishment is particu-

larly conspicuous in the section for the females. One of the women, who had been refractory, had her arms confined. We had previously observed, in the men's department, that confinement by straps in chairs and beds, is also resorted to in cases of violent mania.

"Who are you?" inquired one of the women who were eating, after having scrutinized me with the wild and searching gaze of a maniac, "are you a Methodist minister?" "No," said I, "I am *an American.*" This answer was perfectly satisfactory, and no sooner was it uttered than half-a-dozen patients suddenly rose, "O, you are from *America;* then you know my brother," said one. "Do you know J. F.?" inquired a second. "Have you ever seen —— ——?" asked a third; "he is my husband's brother." "I have a sister in America," remarked a young woman, looking up with a smile so gentle and an expression of countenance so calm and subdued, that one beheld in it more of the attractive innocence and beauty of sane and healthy childhood, than the fierceness and wildness of confirmed lunacy.

The number of patients admitted to treatment in this Asylum, from the time it commenced operation, Nov. 23d, 1818, to January 1st, 1837, was 2242, viz.

	Males.	Females.	Total.
	1150	1092	2242
Of whom there have died,	420	289	709
" " " been discharged,	560	664	1224
" " " are remaining,	170	139	309

The total number of cures was 991, equivalent to $44\frac{1}{5}$ per cent. The number relieved, but not cured, was 233. The deaths are equivalent to $31\frac{6}{10}$ per cent. The admissions have averaged, for a few years past, between 140 and 150 per year.

The following table exhibits the ages at which all the patients were admitted:—

	From 16 to 20.	From 20 to 30.	From 30 to 40.	From 40 to 50.	From 50 to 60.	From 60 to 70.	From 70 to 80.	From 80 to 90.	Total.
Males,	56	282	303	285	127	74	18	5	1150
Females,	51	232	324	270	128	71	13	3	1092
Total,	107	514	627	555	255	145	31	8	2242

By this it will be perceived that the number received between 20 and 30 years of age is less than that of those between 30 and 40, or even those between 40 and 50. The number between 30 and 40 is considerably larger than either of the others. It is greatly to be regretted that the ages of the attacks, instead of those of entrance to the Asylum, could not have been preserved. Had this been the case, the number of those between 20 and 30, and 30 and 40, would probably both have been larger, the former certainly so, while all those of a greater age would have been reduced.

The next table exhibits the results of treatment in reference to the stage of the disease, or its term of duration.

	Admitted.	Cured.	Died.	Discharged not cured.	Remaining.
1st. Within 3 months of the first attack,	682	382	163		
2d. " 12 " " "	409	212	149		
3d. Between 1 and 30 years from "	516	58	265		
4th. Those who had previously been insane and confined in this Asylum,	288	339	132	233	309
5th. Those who had been previously insane but not treated in this Asylum,	347				
Total,	2242	991	709	233	309

Of the 1st division there were cured, 56.01 per cent, and 22.9 per cent died; of the 2d division 51.83 per cent were cured, and 36.43 per cent died; of the third, 11.2 per cent were cured, and 51.35 per cent died; of the 4th and 5th included together, 53.38 per cent were cured, and 20.79 per cent died.

By an examination of these results we have another evidence of the utility of treatment during the acute stage of insanity.

The Retreat, near York.—Perhaps the remarks to be made upon this Asylum cannot be given more suitably than in an extract from a letter, written to a correspondent while I was in York, in 1837.

"Soon after dinner, on the day of my arrival in this city, a son of Samuel Tuke called at the hotel with an invitation from his father for me to make a home at his house during my stay in York. This politely-proffered hospitality was accepted, and I shall ever remember with pleasure the hours which I have spent beneath this roof, in the society of an intellectual and intelligent family. S. Tuke is well known in this country, as well as in the United States, by those interested in the treatment of lunatics, for the attention which he has devoted to the subject, and the essays connected with it which have emanated from his pen. It is probable that no other man living, without the pale of the medical profession, is so well acquainted with the proper management of the insane, and the most suitable construction, arrangement and discipline of lunatic asylums. His father was the projector of the Retreat, an institution of the kind near York, which, under the auspices of the son, and others, has attained a high reputation. This Asylum was the pioneer in that great and important revolution which has taken place in the moral treatment of the insane. 'The Retreat near York' has long been quoted in the United States, as approaching nearer to perfection in its management, and as giving a higher per centage of cures than any other public establishment in England.

"I breakfasted, yesterday, with Dr. W——, and, subsequently, he accompanied me to this Asylum. The superintendent conducted us through the several departments. The buildings are, perhaps, less convenient than those of some other similar institutions, inasmuch as, having been at first small, they have been several times altered and enlarged, according to the

increasing necessity for additional accommodation. To the wings, hitherto but two stories in height, an additional story is now in progress of erection. Originally intended for but thirty, the buildings, after the completion of the present improvements, will furnish ample room for a hundred and twenty patients. The classification of the insane is founded, principally, upon their ability or willingness to pay for the accommodations afforded. There are four classes, in the lowest of which the price is fixed at *four* shillings, sterling, per week, while in the highest it varies from about *twenty* to *eighty* shillings. Those who pay the price last mentioned have two rooms, elegantly furnished, and a special attendant. System and neatness prevail in every department, and elegance is added to that of the class last mentioned. The courts, or yards, occupied by the patients when out of doors, correspond with the rooms within. That belonging to the highest class of men is a lawn, gently sloping southwardly, surrounded by trees and hedges, and bordered with a diversity of flowers, the profuse blossoms of the rose predominating at the present time. In this court there were several patients either reading in the shade or amusing themselves with the flowers. In cooking, steam is used to a considerable extent; and, as we passed through the kitchen, we perceived that instrument of olden days, a smoke-jack, turning no less than four spits, liberally supplied with meat.

"It appears to have been the aim of those who have had the direction of this institution, to make the place a *home* to each patient. Hence the expense devoted in improving the grounds and the apartments, and hence, also, the introduction of amusements, judiciously selected, and the encouragement of reading and of labour. S. Tuke believes that labour, properly pursued, is the most efficient auxiliary in effecting a cure, and acknowledges the superiority of the treatment at the Asylum at Siegberg, on the banks of the Rhine, over all others, principally from their having succeeded in *inducing*, not *compelling*, the *wealthy* patients to labour. In England, as in the United States, the officers of the Lunatic Asylums complain of negligence on the part of the friends of insane persons, in omitting to place them under their care until the disorder has assumed a chronic character, and, consequently, the probability of a cure exceedingly diminished. In order, if possible, to remedy this evil, fraught, as it is, with consequences of so fearful a nature to the unfortunate sufferers, the directors of the Retreat have ordered that an abatement of four shillings per week during the first year of the patient's residence in the Asylum, be made from the expenses of those who enter within six months of the first decisive symptoms of the dreadful malady."

From the report of the Retreat for 1837, we learn that, since its foundation, 508 insane persons have partaken of its benefits. Of this number, 245 were men, and 263 women: 85 of the former and 95 of the latter had been married, but some of them were widowers and widows.

The following table exhibits the result of the treatment of the whole number up to the time of making the report:—

	Admitted.	Recovered.	Much improved.	Improved.	Died.	Stationary.	Remaining.
Of 1st attack, and less than three months duration,	89	71	1	4	12		1
Of 1st attack, and from three to twelve months duration,	107	47	7	6	20	4	23
Less than 12 months duration, but not the first attack,	111	66	4	6	15	6	14
More than twelve months duration,	201	52	4	18	66	13	48
Total,	508	236	16	34	113	23	86

Besides the results immediately evident by the table, it will be found, by calculation, that the cures of those in the uppermost line, or those of the first attack and admitted within three months of its commencement, are equal to 79.7 per cent; of those between 3 and 12 months, 43.9 per cent; of those of the second attack, and whose disease was of less than 12 months duration, 59.4 per cent; and of those of more than 12 months, 25.8 per cent. The cures of the whole equal 46.5 per cent, and the deaths 22.2 per cent.

The following table, showing the ages of those who died, may be useful in ascertaining the comparative length of life in maniacs and the sane.

Died.	Under 30 years.	Between 30 and 40	40 and 50	50 and 60	60 and 70	70 and 80	80 and 90	90 & 100	Total.
Males,	5	8	5	15	10	6	6	1	56
Females,	6	4	10	8	16	8	4	1	57
Total,	11	12	15	23	26	14	10	2	113

The next table gives the ages at which 89 of the patients were first attacked with the malady for which they were confined. As such it is very valuable; and it is to be regretted that the same data could not have been ascertained and preserved in regard to a greater number.

Between 15 and 20	20 and 25	25 and 30	30 and 35	35 and 40	40 and 45	45 and 50	50 and 55	55 and 60	60 and 65	65 and 70	70 and 75	75 and 80	Total.
8	17	18	13	12	4	5	2	3	2	4	0	1	89

It has already been remarked that amusements and labour have been introduced into this institution, as curative means. Of the former, however, there is not so great a variety as in some other Asylums, and a difficulty exists in applying the latter to so great an extent as would be desirable, from the fact that a large proportion of the patients, who, from their previous station in society are unaccustomed to manual labour, and consequently indisposed to it.

York Lunatic Asylum.—In the suburbs of the city of York, in a direction nearly opposite to that of the Retreat, and not far from Bootham Gate, stands the York Lunatic Asylum. It is approached through an avenue, nearly a quarter of a mile in length, and thickly shadowed by lime trees.

This institution was established in 1777, the necessary funds having been raised by voluntary subscription. It was intended for the insane, both paupers and others, within the limits of the county in which it is situated. In some instances, however, when peculiar circumstances render it desirable, those from other counties are received. From the nature of this institution all patients are obliged to pay for their accommodation. The expenses of the paupers, of whom there is a considerable number, are defrayed by the parishes to which they severally belong. The price varies from 6 shillings to 2*l.* sterling per week. Parish paupers of the county of York pay 6 shillings, those of other counties, 7 shillings. Other indigent persons pay according to their circumstances. By paying 3 guineas per week, a patient is permitted to bring his own servant to the Asylum. In this case the board of the servant is an extra expense.

The principal edifice is of brick, consisting of a central portion and two wings. Another building, affording additional accommodations, stands adjacent to this and nearly in the rear of its westerly wing. The courts or yards are all spacious, and those occupied by the highest classes of patients are well cultivated, being handsomely planted with shrubbery and flowers. The number of insane in the Asylum, in the summer of 1837, was 170. There are accommodations for 200. The patients are divided, as in the Retreat, into four classes, the principle forming the basis of classification being the same as at that Asylum. Among the amusements permitted are cards and billiards. Several groups of patients were engaged in playing with the former at the time I passed through the wards. The straight jacket, the "refractory chair"—(into which a patient may be fastened by a strap passing around his body)—and muffs, for the confinement of the hands, are among the resources for punishment or coercion.

The number of patients admitted to this Asylum from the time of its going into operation, in November, 1777, to October 10th, 1814, was 2635. Of these there were discharged, either cured, improved, or at the request of friends and guardians, 2133. Of the remainder, 399 died, and 103 remained in the Asylum at the latter date. The deaths during this period were equal to 16.8 per cent. Again, from Oct. 10th, 1814, to June 1st, 1837, a period of 22 years $4\frac{1}{2}$ months, there were 1131 admissions, which, together with the 103 remaining at the former date, makes a total of 1234. Of these there were 387 cured, 224 improved, 247 removed by their friends, and 217 deceased. There were remaining in the Asylum, at the date last mentioned, 83 men and 76 women, a total of 159. Excluding this 159, as being still under treatment, we have for the cures 36 per cent, and for the deaths 20 per cent.

The officers of the York Asylum are a physician, a chaplain, a treasurer, an apothecary, a steward, a house steward, and a matron. The steward acts as secretary, keeps the minutes of the courts or meetings of the governors, the lists of admissions, removals, deaths, &c. and an inventory of property in the possession of the patients when admitted. He sees to supplying clothes, pays the bills for goods used in the house and for the spe-

cial use of patients. The institution is under the care of a number of officers, called governors. They consist of all the benefactors of the Asylum to the amount of 20*l.* and upwards, besides the Lord Mayor of York and one or two other *ex-officio* members. The governors hold five meetings, or, as they are technically termed, "courts," during each year. Special meetings may also be called. A committee appointed by the governors hold monthly sessions for the purpose of auditing accounts, contracting for supplies, &c. &c. No officer resident at the Asylum is eligible to a place in this committee. There are two visiting governors for each month in the year, and three ladies, having similar duties, and appointed by the governors, for each quarter.

The physician, who, I presume, does not reside at the Asylum, is required to visit the patients, regularly, three times a week, independently of those times in which some special case requires his attention. Divine service is performed every Sabbath, by the chaplain; and if those patients whose state of health does not admit of their attendance, should desire it, the chaplain is required to visit them in their wards at least twice a week, provided they are in a suitable state of mind. The apothecary resides in the house. It is his duty to oversee the attendants, to visit every patient twice during each day, to keep a history of all the cases admitted, to decide when and in what manner coercion shall be used, together with such other duties as generally belong to an officer of this kind.

Any servant who strikes or otherwise mal-treats a patient is dismissed. If a patient escape, the expense of retaking him is defrayed, either wholly or in part, at the discretion of the committee, by the servant having charge of him. No officer or servant is allowed to receive any fee or gratuity, other than the regular salary.

The friends and medical attendant of each patient admitted to the York Asylum receive the following questions, to which they are requested to give as correct answers as possible:—"Is this the first attack? If not, how many previous ones, and at what distance of time from each other? How long since the commencement of the present one? Has any, and what change taken place in the symptoms? Is there, or has there appeared, a disposition to self-destruction? or to injure others? or to destroy clothes? What defect, impropriety or false notion marks the disease? What circumstance appears to have been the exciting cause? Was there any previous singularity or weakness? Is it known that any of the patient's relations have been in any degree deranged? What was the patient's natural temper? Favorite pursuits? Habits? (as to temperance.) Of what religious profession? Have any, and what, medical means been employed? Is the patient subject to fits? or labouring under any bodily disease? Has the patient had the small-pox? or the vaccine disease?"

Asylum at Amsterdam.—The city of Amsterdam, famous for its large number of charitable institutions, is supplied with two extensive civil hospitals, one of them in a central part of the town, the other, half a mile distant from its southern limits. Connected with the latter, or rather constituting a portion of it, there is an Asylum for the insane. A gentleman to whom I carried letters of introduction, having obtained, from the proper authorities, permission to visit that institution, accompanied me to it. The resident physician, a young man of enlarged intelligence and of great en-

thusiasm in the profession of which he is a member, conducted us through the several departments. The building is of somewhat antique construction. Each ward, like those of most hospitals for the sick, is without subdividing partitions, the beds being arranged upon either side, and, in this instance, rather too compactly. The wards are, moreover, like those in the hospitals for the sick in Amsterdam, in that they are two stories in height, a platform, or gallery, running around, above the beds, between the first and the second story. This is used as a place of promenade for the patients. There are seven wards, four for women and three for men. The courts devoted to the use of the patients, and of which there is but one for each sex, are very small, and being without shrubbery, flowers, or even green-sward, have the naked and forbidding aspect of a prison-yard. Natives of the city of Amsterdam, alone, are admitted into this Asylum. The patients are mostly paupers, or subjects of charity. There are six beds, in small, decently furnished rooms, which are intended for pay patients. The number of patients, in July, 1838, was 157. Of these 69 were men, and 88 women. A large majority of them were incurable. No less than 45 of the women were epileptics. One of the men has been in the Asylum ever since the year 1793. During the two years and eight months ending in July, 1838, there had been admitted 85 men and 78 women, or a total of 163. In the same period, 27 men and 29 women had been cured, and 40 men and 37 women had died. As means of coercion and punishment the hands and feet of patients are sometimes fastened, and the camisole, the straight-jacket and imprisonment are resorted to. For the last mentioned purpose there are six dungeons, constructed three upon either side of a small apartment. One of these was occupied at the time of my visit, by a woman, who was naked, raving and filthy.

But little, indeed nothing, can be said in commendation of this Asylum. Time, perhaps, has been, in which it ranked among the most comfortable, and the most judiciously managed institutions of the kind in the world; but it has so long remained stationary that others have far outstripped it in the rapid march of improvement which has characterised the last half century. The resident physician of the place is fully aware of its deficiencies, and is endeavouring to effect a change. In fact, the city government has already promised radical reform. The most glaring defects, at present, are, an insufficiency of room within doors, as well as without; a want of cleanliness, particularly in the men's wards, and an almost entire absence of either labour or amusements. A few of the women were either knitting or sewing, but the men, without exception, were unoccupied, lying on the floor, the ground, or the beds, standing in the stupidity of dementia and idiocy, or walking to and fro, raving with the unbridled fury of madmen. There was about the place an air of most indescribable melancholy. How different from many a scene which I had witnessed in similar institutions in Great Britain, France, and the United States—institutions in which commodious apartments, thorough ventilation, and a scrupulous regard to personal cleanliness, conduce to the physical health of the patients, in which judicious amusements win the wandering mind to its wonted path, and appropriate labour tends to calm the disturbed and agitated intellect.

Asylum at Utrecht.—I had a letter of introduction to Professor Vander Holk, of the University at Utrecht, the principal physician of this hospital, but he was absent in the country. M. J. J. Vander Hagen Vander Heuvel, one of the agents, had the kindness, however, to accompany me to the Asylum and through its several departments. From the specimen of Dutch institutions of the kind which I had seen in Amsterdam, I confess that my expectations in regard to this were not very exalted. Besides, while we were on our way to it, M. Vander Heuvel took the opportunity to speak of its defects, saying that not much had been done by way of improvement, that much remained to be done, and that, to one who had seen the Asylums of other countries, this could present nothing of interest.—Thus prepared, thus prejudiced, we entered the Asylum and gave it a pretty thorough examination. And it is but justice to say, that in no other institution have I seen greater neatness, more apparent order, or the evidence of a more enlightened and rational mode of treatment.

This Asylum was formerly a private establishment, founded in the 15th century. It continued in existence, still pursuing the old method of treatment and of discipline, until the year 1830. In that memorable year of revolutions the spirit of reform crept into this institution, effected a radical change, and is still continuing the march of improvement. The building, though still comparatively small, has been enlarged; the courts have been planted with trees and flowers, and, at the time of my visit, in July, 1838, their size was being much increased by extending their limits over the sites of some ancient buildings, purchased by the "Regents" of the Asylum, and demolished by their order. The building is shaped like the letter L. The room of the superintendent is in the angle, in the second story, so situated that he can see every patient who is out of doors. The wards have dormitories on but one side, the remaining space being an entry or hall, which is used as a place of promenade in bad weather. The bedsteads for the most maniacal patients, and such as are not the most cleanly, are somewhat different from any others which I recollect to have seen. They are made of boards, in the form of a child's crib, though deeper, and the bottom is concave or descends in every direction to the centre, where there is an aperture for the escape of water. There is a common sitting room for each class of the inmates. The number of patients, at the date first mentioned, was 94, that of the two sexes being about equal. They are divided into three classes, the basis of division being the sum paid for entertainment. Those of the first class pay 812 florins, equal to about 125 dollars, per annum; those of the second, 412 florins or 165 dollars; and those of the third, 100 and 150 florins. The third class is composed of paupers. Their clothing is included in the sum mentioned. Those who pay but 100 florins are natives of Utrecht; those who pay 150 come from other places. The rooms of the first class are furnished handsomely, but not with that elaborate elegance which is seen in those of the similar classes in some Asylums.

When necessary the camisole or the straight-jacket, fetters, the douche and the dungeon are put in requisition as means of punishment. The stream of water forming the douche is but one-fourth of an inch in diameter, while those of Salpêtrière and Bicêtre, at Paris, are about seven-eighths of an inch. The quantity of water flowing from the latter must consequently be nearly twelve times as great as from the former. There is but one bathing tub

belonging to the establishment, but the accommodations in this respect are about to be increased. The patients resort to reading, writing, drawing, music, cards, billiards, chequers or draughts, and some other games, for amusement. There is a library intended for their use. The billiard table, a large and handsome one, was made by two of the former patients. In one of the men's rooms several patients were occupied in drawing and reading; and, had it not been for the wildness of the eye, and the characteristic traits of countenance, which cannot be mistaken, in one or two others who were present, I could hardly have believed myself to be in a mad-house. Most of the men in the first class were in the court devoted to their use. Among them was a physician. He conversed freely upon his situation, gave an account of his commencement of practice, and the success which attended his efforts, until his friends thought it best for him to take lodgings in the lunatic Asylum. At length he asked me if I thought him deranged. He had talked so rationally, and this question was put so directly and so earnestly, that to avoid answering it was almost impossible. An evasive reply, if any, must be given. "It is difficult to define derangement," said I; "and, if we should accept the definition given by some authors, we should include almost the majority of mankind." He appeared satisfied with the answer, and only remarked, with a melancholy tone, "*Je crois bien que le plupart des gens sont des aliénés.*" Poor man! although reason was dethroned, it was evident from his conversation that the affections retained their empire.

Some of the women were employed in sewing, knitting and house-work; some of the men in carpentry, shoemaking and tilling the garden. No accident has hitherto occurred from the use of edge tools by the patients.

The following are the statistics of the entrances, cures, deaths, &c. from 1832 to 1837, inclusive:—

Date.	Entered.	Cured.	Died.	Disch'd not improved.	Per cent of cures.	Per cent of deaths.
1832	22	10	3		45.45	13.63
1833	44	14	6	2	31.81	13.63
1834	41	16	13	7	39.02	31.70
1835	53	18	11	6	33.96	20.75
1836	57	25	10	11	43.50	17.54
1837	38	21	12	11	55.26	31.57
Total,	255	104	55	37	40.07	21.56

As the cures and deaths were not among those patients alone who entered in each several year, but among all those in the Asylum at the time, data of which I am not possessed, it is impossible to ascertain their exact per centage. On the supposition, however, that as many remained in the Asylum at the close of the year 1837 as there were in it at the commencement of 1832, and rejecting both those numbers, we shall find that there was 40.07 per cent of cures and 21.56 per cent of deaths. This is the manner in which the similar statistics of most other Asylums are calculated. The result in this instance cannot be very remote from the truth, and I am the more inclined to believe in its very approximate accuracy from the following table given me by M. Vander Heuvel. It includes the admissions and the cures during five successive years.

	Received.	Cured.	Per cent.
Men,	142	74	52.11
Women,	75	14	18.66
Total,	217	88	40.55

This Asylum is under the care of a body of directors, called "Regents." They are elected, annually, by the city officers. Endued with the spirit of improvement, they appear to be determined that the institution shall be made as nearly perfect as means and circumstances will admit. In order the more completely to effect this object, they have made, among themselves, a division of labour, thus being able to work with more efficiency than if they acted conjointly. One of their number has charge of the finances; another, of clothing; a third, of the building; a fourth, of the food; and the others, of other departments.

Before closing these remarks, I may observe that I was as agreeably surprised in this Asylum as I had previously been sadly disappointed in that at Amsterdam; and perhaps the assertion of Halliday, that "nowhere are more comfortable hospitals to be found than in the Netherlands," may prove as correct in the present day as it was years since, at the time in which that author wrote. Other countries may possess larger, more convenient, and more elegantly furnished buildings, but none in which the end appears to be much more effectually accomplished than in that at Utrecht.

Asylum at Antwerp.—Being in Antwerp without letters of introduction, I went to the Asylum, in hopes of being allowed to see its several apartments without any special assistance of the kind alluded to. A man-servant in a blue frock met me at the door, and, upon being informed of what I wished, requested me to wait a few minutes, in the drawing room, until the "Père" should come. This officer soon arrived; but, what with his ignorance of both English and French, and mine of Dutch, not a word could pass between us, mutually understood. The servant, however, speaking French, acted as interpreter; and, through him, I learned that it was impossible for me to go through the establishment without permission from one of the "Regents." This difficulty was overcome, as at Utrecht, by despatching the servant with me to the house of one of those officers. H. Willært, the gentleman to whom I thus became introduced, appears to be much occupied in objects of benevolence, having been many years a member of the "Administration des Hospices" of the city in which he resides. This "Administration" consists in a body of men, each called "Regent," to whom is entrusted the general superintendence of the City Hospital, the Lunatic Asylum, the Foundling Hospital, and two Orphan Asylums, one for boys and the other for girls. They are the trustees of a large amount of property belonging to the city, the interest of which is devoted to these several institutions. They are elected by the burgomaster, for the term of five years. In order to economise both time and labour, as well as to make the arrangements and regulations of all the institutions as nearly perfect as possible, by enabling each individual to obtain a more complete knowledge of one of them than he could of the whole, and to concentrate his efforts thereupon, the several members have divided their trust, each taking the principal direction of one of the establishments. The total

number of persons under the care of the Administration is upwards of three thousand. H. Willært has the charge of the Lunatic Asylum.

After having spent an hour in conversation, during which I obtained much information in regard to the state of society in Antwerp, as well as in relation to the management of its several charitable institutions, M. Willært offered to accompany me to as many of these institutions as I might feel desirous of seeing. Accordingly, we went to the City Hospital, the Foundling Hospital and the Lunatic Asylum. Passing by the first two, as irrelevant to our present subject, I proceed to a notice of the last.

Arrived at the Asylum, we were conducted through it by the "Père," the French servant carrying the keys. The building, composed of brick, is very old. It is but two stories in height and encloses several small courts, which, like almost everything connected with lunatic Asylums in general, have, within the last few years, been made "to blossom as the rose." They had never been cultivated until since the commencement of the administration of M. Willært. The internal construction of the building, the arrangement of apartments, &c., is such as might be expected in an edifice of this kind erected a century since, at a time in which the comfort of the patient was sacrificed to a paltry economy, in which their proper treatment was unknown, and the unfortunate maniac was placed, in public estimation, upon a level with the criminal who has flagrantly violated the laws of both God and man. The doors of the dormitories, throughout the establishment, still bear the relics of those days, in the huge bolts with which, at both top and bottom, they are fastened. I spoke of them, in passing, and the gentleman accompanying me remarked that they were soon to be taken off. The rooms referred to are arranged on both sides of very narrow passages leading through each ward. There are 24 cells for the raving maniacs, 12 for those of each sex. These are small; the wainscoting is of wood, in order to diminish the danger of the patients injuring themselves against the walls; and each contains no other furniture than a bed. These beds are low, made of plank, and fastened to the walls. The mattrasses, throughout the building, are mostly of straw; those of the convalescent and of the pay patients are, however, of better materials. In the infirmary the beds are very good. The corpse of a patient, just deceased, was lying upon one of them when we passed. There are special wards for the idiots, epileptic and incurables. A few years since the proportion of incurables was very large; but the Grippe, which prevailed so generally, in an epidemic form, throughout the west of Europe, during the winter of 1836–7, carried off many of them, and, subsequently, most of those who had been attacked by it and recovered, became victims to phthisis pulmonalis. Each class of patients has a court and a common hall, in which they spend most of their time. The halls are warmed by stoves, which are surrounded, at a few feet distant, by a strong reticulated wire fender. The dormitories, or private rooms of the patients, as well as the cells for the furious, are not furnished with the means of being warmed. At the suggestion of Ramon de la Sagra, the celebrated political economist of Spain, who visited this institution but a few days before I was there, the defect is about to be remedied by the introduction of a hot-air furnace.

The number of patients in the summer of 1838 was 130, of whom 60 were men and 70 women. The Asylum is sufficiently large to accommo-

date a much greater number. A few pay for their entertainment; those who are natives of Amsterdam, 280 florins, or 112 dollars; and others, 300 florins, or 120 dollars, per annum.

Regimen.—Breakfast; tea, bread and butter. The bread is made of equal proportions of wheat and rye. *Dinner;* meat and bread four days in the week; soup and vegetables, with bread, the remainiug three. *Supper;* bread and butter, with beer, if wanted. The beer, which is not very strong, but sufficiently so to be palatable, is at the command of the patients at all times.

Labour and *amusements* have not, as yet, been extensively introduced. A few of the men work at small jobs, such as some parts of domestic labour, whitewashing, &c., and there is one room in which the convalescent and some of the quiet incurable women were spinning tow and making lace with bobbins. Both men and women are remunerated for whatever labour they perform, it having been found "difficult, or nearly impossible," to induce them to work, except by the stimulus of pecuniary reward. Connected with the building is an elegant Catholic chapel in which mass is regularly said. Such patients as can be admitted with propriety are allowed to attend. There is an apartment for the men, and another for the women, so arranged that they may all witness the ceremonies before the altar, without the ability to see each other or the rest of the congregation. Attendance upon the services is considered a privilege, as such is dispensed, and as such is much sought. Thus here, as in other places, religious worship has been found, to a certain extent, an efficient means in the moral treatment of the insane.

La Salpêtrière.—This vast Asylum for the poor, this pauper-village, if the term be admissible, was established by Louis XIV. in the year 1656. It is devoted exclusively to females, for whom it contains about 4500 beds. It is in the hospital of this extensive establishment that the celebrated Cruveilhier has collected most of the materials for his elaborate and beautiful works upon pathological anatomy. The department devoted to the insane is, perhaps, the most extensive in the world, the number of patients usually exceeding 1000. The approximate number of admissions, per annum, is 500, that of discharges 300, and of deaths 200. The cures are equal to $33\frac{1}{3}$ per cent of the whole number admitted. "This proportion," says a French author, "is sufficiently large, when we consider that many of the maniacs do not enter the Salpêtrière until after they have been treated, and pronounced incurable, at other hospitals (*maisons-de-santé*)." Drs. Pariset and Mitivié have charge of the department for lunatics. The medical visit was made by the latter on the morning that I was there. He seems admirably qualified, by his gentleness and kindness of manners, and his firmness of character, for the situation which he fills. It is a fact, too generally known to require repetition, that this establishment and the Bicêtre were the chief theatres of action of the benevolent Pinel; that, by him, the Augean stables of their misery, degradation and torture were cleansed; that, at his suggestion, the great amelioration in the condition of the inmates, wrought both during his life and since, have been effected. France owes a debt of gratitude to this benefactor of a portion of her citizens which the giving of his name to a ward in the Salpêtrière but inade-

quately repays. Pope, in allusion to the broadly contrasted characters of the Roman emperors, Cæsar and Titus, exclaims—

> "And which more blest, who saved his country, say,
> Or him whose virtue sighed to lose a day?"

In like manner may we not ask which is "more blest," Napoleon, wading through the blood of six millions of his fellow beings to a transient throne of despotism, or Pinel, severing the manacles and chains of those who had been laden with them merely because suffering under a disease to which all are liable, breaking up the strong holds of misery, and carrying light, cheerfulness and content into the abodes of darkness, wretchedness and woe. The ameliorations prospectively made by this distinguished philanthropist, and subsequently insisted upon by his brother in benevolence, M. Esquirol, have not, hitherto, been fully accomplished. A few years, however, will suffice for their completion. The buildings recently constructed for the patients are but one story in height, and surround a spacious court.* Upon three sides there are wards, and, on the fourth, two bathing rooms, communicating with each other, and with the wards, by an extensive corridor, similar to the markets of Philadelphia, if deprived of their benches. The wards have two rows of windows, the upper ones, which are small and near the ceiling, being kept open at all proper seasons, for the purpose of ventilation. In one large enclosure, belonging to the establishment, there are several, perhaps 14 or 15, small buildings for the furious, each adapted to the accommodation of one alone. They are heated by an apparatus beneath the floor. In one of them there was a girl, of interesting appearance, who begged the physician that he would order a camisole to be placed upon her, lest she should do herself some injury. In reference to the treatment at this Asylum, M. Milne Edwards says:—"On n'emploie jamais, envers les aliénés, aucun moyen violent: la plus grande douceur et les soins les plus affectueux sont instamment recommandés à toutes les surveillantes, et les médecins en donnent l'exemple; les bains, quelquefois des douches, des exutoires, de doux purgatifs, des moyens propres à rappeler les évacuations qui seraient supprimées, tels sont les principaux remèdes employés. L'isolement et les moyens moraux sont les bases du traitement."†

Le Bicêtre.—The "hospice," or pauper Asylum of Bicêtre, is in a southerly direction from Paris, about two miles from the walls at the barrière de Fontainebleau. It is for men alone. Its extent is less than that of La Salpêtrière, the number of inmates being about 3000. The department for the insane is proportionally smaller. The number of patients in May, 1838, was 760. The average number of admissions, annually, is, for the insane, 360; the imbecile, 40; that of discharges of the former, per month, from 12 to 15; the deaths about the same, and the cures from

* In regard to buildings of this kind, Esquirol observes, "During the last twenty-five years I have often exposed the inconveniences of buildings several stories in height. I have so loudly proclaimed the advantages of a ground floor as the dwelling place for the insane, that I shall abstain from remarking upon them here, particularly as in France, as well as in foreign countries, my principles have been received and put in practice in the construction of lunatic Asylums."

† *Notice sur les Hôpitaux de Paris*, in the *Nouveau Formulaire Pratique des Hôpitaux*, by Milne Edwards and P. Vavasseur.

7 to 8. The proportion of deaths to the whole number admitted is as 1 to 6, or 16.66 per cent. The medical care of the patients is confided to Drs. Ferrus and Pinel. The work quoted at the close of our remarks upon La Salpêtrière says, in reference to this Asylum—"Tout ce que Pinel a blamé est détruit: tout ce qu'il a demandé est exécuté. Les loges ont disparu; des promenoirs assez vastes sont établis; le nombre des gens de service est augmenté (ce qui n'existe pas encore pour la Salpêtrière, où les filles servantes sont, en outre, trop peu rétribuées.) Il y a une ferme dans laquelle vout travailler, chaque jour, soixante aliénés. On ne saurait dire tout le bien qui résulte de ces mesures. Autrefois si la division des aliénés ressemblait à quelque chose, c'était à un enfer; maintenant tout y est calme, et il n'est pas rare que les nuits se passent tout entières sans qu'on y entende le moindre bruit."

Admission to the department for the insane can be obtained only by a special permission from the "Directeur" of the establishment. An English physician accompanied me to the place, and having obtained a permit, we entered. Dr. Pinel made the medical visit for the day, and we accompanied him through all the wards. He, too, like his illustrious predecessor of the same name, appears to take a lively interest in the unfortunate class of persons with whose treatment he is entrusted, and seems well qualified, by both nature and education, for the important and responsible station which he occupies. Many of the patients greeted him with a "bon jour;" those who were not confined to their beds thronged around him, to converse, some seizing his hand and saying, "Vous êtes un bien brave homme," or some other compliment of a similar kind, he, the while, treating them as his friends and companions, and adapting his conversation to each, according to his particular hallucination. In one of the wards which we first entered, a merry patient, seeing us approach, took his violin for the purpose of giving his physician a musical entertainment. He followed us through the ward, playing several lively airs, and when we were about to leave, insisted upon accompanying us. The doctor permitted him so to do, and he followed us, constantly playing upon his fiddle, through most of the remaining wards.

The recently constructed buildings of the Bicêtre are upon the same plan as those of La Salpêtrière, though not so spacious. The courts are planted with trees, and supplied with permanent seats beneath the shade. After the visit was completed, we went to the bathing room, which is furnished with perhaps a dozen tubs. Over each of several of them, at the height of about five feet from its top, is a douche, the diameter of the stream of which is a little more than three-fourths or about seven-eighths of an inch. There were patients in two of the tubs, each being confined in his place by a board passing around the neck as in a pillory. One of them was a robust man, of a nervo-sanguineous temperament, who, during the course of his alienation, had been subject to several hallucinations. At one time he talked so long and so constantly as to produce aphony. At another he was rich as Crœsus, and 25000 francs of his annual income accrued from a pinch of snuff. He now believed himself to be the husband of the Duchess de Berri, and a favorite friend of the ex-king, Charles X., and of his son, the Duke de Bordeaux; that these persons had recommended him to Louis Philippe, who showed him particular attention and was about to load him with honours. On the previous day he had requested to be furnished with

materials for writing. These were given him on condition that he should write something reasonable, and not the wild vagaries with which his mind was haunted. He wrote a letter to M. Dupin, president of the Chamber of Deputies, desiring that gentleman to give his compliments to Louis Philippe, and many thanks for the kindness which he had received and should receive, in future, from his Royal Highness. Pinel approached the patient with this document in his hand, reminded him of the conditions upon which he was permitted to write, read to him the letter, an amusing tissue of absurdities, and then asked him if he still believed himself to be a favourite of the royal family. "Oui, Monsieur," was the instantaneous reply. "Give him the douche," said Pinel. A servant who stood waiting orders, turned the water-cock and the stream fell directly upon the vertex of the patient's head. He struggled, writhed and screamed under the shock, and begged that it should be stopped. This request was complied with in a few seconds. *Pinel.* "Do you still entertain the foolish idea that you are an intimate friend of Charles X." *Patient.* "I think I do." *Pinel.* "Let him have the douche." This was no sooner ordered than obeyed. The patient floundered, hallooed, and begged as before. The douche was stopped. *Pinel.* "Are you an intimate friend of Charles X. and the Duke de Bordeaux?" *Patient.* "I presume so." *Pinel.* "Give him the douche." It was given with all the previous results. The doctor again read some portions of the letter, attempted to convince the man of the absurdity of his notions, and concluded by asking him what marks of attention he had ever received from the "Roi déchu." *Patient.* "You are aware, Monsieur Pinel, of the important works of which I am author, and which were written long since. I presume, Sir, that Charles X. takes a great interest in those, and consequently in me; besides, he has given me a letter of recommendation to Louis Philippe, from whom I have received so many proofs of friendship." *Pinel.* "It is impossible that Charles X. should have given you a letter of that description to Louis Philippe, since they and their families are at enmity with each other." The patient muttered something about Henry V. and an umbrella. *Pinel.* "France knows no such person as Henry V.; when you speak of the gentleman referred to call him Duke de Bordeaux." In this manner nearly half an hour was occupied, the douche being administered whenever the patient insisted upon the truth of his fantastical ideas. At length, what with the arguments of the doctor, and what with the still more cool and cogent logic of cold water to the head, the patient yielded his points, deeply regretting, however, to be thus shorn of his splendor, and so unceremoniously brought down from his "high estate." Pinel then gave him a lesson to commit to memory for the following day.

The other patient was meagre and of a bilious temperament. Throughout the scene which we have partially described, he remained perfectly quiet in his bath. On the day previous a task of manual labour had been given him, and he had left it untouched. Pinel approached and asked him why he had done so. He looked up with a smile and a most ludicrous leer of the eye, as he said, "To speak candidly, Sir, I *felt no particular desire* to work." The doctor himself could hardly refrain from laughter. "Well," said he, "will you work, hereafter, whenever you are ordered to?" The patient reflected a moment then looked up with the same expression of countenance as before, and said, "Enfin, je ne veux pas travailler,

parole d'honneur." "Give him the douche," said the doctor, and the stream of water instantly fell upon the patient's head. The effect was even greater upon him than it had been upon the other, insomuch that, in a moment, like a child smarting under castigation, he exclaimed, "I will, I will." The douche was stopped, and the task left unfinished on the previous day was ordered to be completed before night.

Asylum at Charenton.—Dr. Louis favored me with a letter of introduction to M. Esquirol, the *médecin en chef* of the Asylum at Charenton, and the distinguished veteran in the treatment of the insane. With this I went to the Asylum, where I had the pleasure of meeting him to whom it was addressed in the scene of his present labours, among the unfortunate people who love and honor him as a father, and in whose welfare his interest continues unrepressed by the weight of accumulated years. After his visit to the patients was completed, I sat an hour with him in the parlour of the institution, during which time he conversed chiefly upon the subjects of lunacy and of lunatic Asylums. After speaking of the comparative merits of the various establishments of the kind in Europe, and giving the preference to that at Regio, in Italy, over all others that he had ever visited, he made many inquiries with regard to those of the United States, and expressed much interest in the progress of improvement in the treatment of the insane upon this side of the Atlantic.

The Asylum of Charenton, in a village of the same name, is about five miles eastwardly from the city of Paris. It is situated upon the southern declivity of a hill, which runs parallel to the river Marne, near its shores, and but a short distance from its junction with the Seine. It was originally a hospital, under the care of the Brothers of Charity. About the beginning of the 18th century, a department was, for the first time, devoted to the reception of those labouring under mental alienation. In 1795, the hospital was suppressed, but in 1797 it was re-established and devoted exclusively to the treatment of the insane. It is now called, in common with some other establishments of the kind in other parts of France, "Maison Royale d'Aliénés." It includes many edifices, which have been erected at various periods, and extensive gardens and promenades, which extend to the summit of the hill upon the declivity of which it is located. The following description is translated from the recent elaborate work of M. Esquirol, to which we are also indebted for most of the subject matter for our remarks upon this Asylum.* "The section for men is composed of four courts, of which three are planted; three infirmaries; one ward (salle) for patients of a suicidal propensity; one dormitory; one gallery and six corridors, into which open the doors of the several rooms; one bathing room, and six rooms where the patients assemble. These last mentioned can be heated. The section for women has a garden, four planted courts, two infirmaries, one ward for women disposed to commit suicide, two bathing rooms, seven dormitories, six galleries and corridors into which open the doors of the apartments, and five rooms in common, which may be heated."

An extensive additional department for females, combining most of the

* Des maladies mentales, considérées sous les rapports médical, hygiénique et médico-légal, par E. Esquirol. Paris, 1838.

modern improvements, was erected about ten years since, and first occupied in 1829. This is one of the best arranged and most neatly-kept establishments of the kind that I have had occasion to examine. The furniture is good and sufficiently handsome, without being extravagant. The beds of the dormitories are hung with white curtains. No corresponding department for the men has hitherto been erected. There is a parlor in the Asylum, in which those patients the state of whose disease renders them admissible, assemble every evening for social intercourse. This contains many arm-chairs, several card tables, and a piano-forte. A room having tables for billiards, is devoted to that amusement. The bathing room of the new department for females contains ten copper tubs, separated from each other by curtains, and each supplied with a cover which may be used in case of necessity. A chapel, or oratory, is devoted to religious worship; the exercises being conducted in the Catholic form. The priest (aumônier) resides at the Asylum. Ministers of other sects are, at the request of patients, permitted to visit them in their wards.

There are three grades of prices for entertainment at this institution: the 1st, 1300; the 2d, 1000; and the 3d, 720 francs per annum. The regimen of the patients varies according to the grade, and is of a quality proportionate to the prices of those grades. The rules of the establishment require that there shall be one attendant to every tenth patient, but this number, according to M. Esquirol, is not sufficient. There are 73 in all, two of whom remain in the garden to oversee those who are walking. Several others have charge of but one or two patients each. The number of persons employed at the Asylum, including, on the one hand, the visiting physician, and, on the other, the gardeners, gate-keeper and hostlers, is 170.

The number of admissions, from the establishment of the institution exclusively for lunatics, in 1797, to the end of the year 1833, is 5972. The following list exhibits the same number divided in the proportion that the patients were received in several different epochs.

From 1797 to 1802 . . .	202
1802 " 1805 . . .	435
1805 " 1817 . . .	1007
1810 " 1815 . . .	722
1815 " 1825 . . .	2049
1825 " 1834 . . .	1557
Total, . . .	5972

Previously to 1815 the number of each sex was not designated, but from that year to 1825 there were 1245 men and 804 women; and from 1825 to 1834, 932 men and 625 women.

The following table, compiled, with some additions, from several of those in the work above quoted, exhibits the number of admissions for each of the years between 1825 and 1834, the condition in society (état civil) of the patients, and the results of their treatment.

Years.	Men.	Single.	Married.	Widowers.	Cured.	Discharged not cured.	Died.	Per cent of cures.	Per cent of deaths.	Women.	Single.	Married.	Widows.	Cured.	Discharged not cured.	Died.	Per cent of cures.	Per cent of deaths.
1826	121	68	49	4	34	39	59	28.09	48.76	89	34	49	6	41	35	28	46.05	31.57
1827	123	72	41	10	51	34	42	41.46	34.14	82	26	48	8	24	29	17	29.26	20.73
1828	122	66	51	5	34	34	54	27.86	44.26	82	27	44	11	25	23	21	30.48	25.60
1829	121	59	55	7	40	38	58	33.05	47.10	71	19	47	5	28	27	15	39.43	21.12
1830	112	54	52	6	34	52	44	30.35	39.28	74	18	49	7	29	19	21	39.18	28.37
1831	109	64	42	3	22	31	51	20.18	46.60	82	27	44	11	29	44	14	35.36	17.07
1832	118	60	56	2	36	40	38	30.50	32.20	79	24	43	12	29	24	17	49.35	21.51
1833	106	62	41	3	33	33	60	31.13	56.60	66	18	39	9	29	25	7	43.93	10.60
	932	505	387	40	284	301	406			625	193	363	69	234	226	140		

The proportion of single men, as calculated from this table, equals 54.18 per cent; of single women, 30.88 per cent; of married men, 41.52 per cent; of married women, 58.08 per cent; of widowers, 4.29 per cent; and of widows, 11.04 per cent. It is a singular fact that the proportion of married men is but about two-thirds as great as that of married women, while that of single men is nearly twice as great as that of single women.

The total number of cures is 518, equal to 64.7+ per annum; that of deaths, 546, or 68.3+ per annum. It will be perceived, by the table, that the greatest proportion of the annual cures of men was in 1827, = 41.46 per cent, and that of women, in 1832, = 49.35 per cent; also, that the least proportion of the cures of men was in 1831, = 20.18 per cent, and that of women, in 1827, = 29.26 per cent. The proportion of the deaths of men was largest in 1833, = 56.60 per cent; that of women, in 1826, = 31.57 per cent; the proportion was least, for men, in 1832, = 32.20 per cent; and, for women, in 1833, = 10.60 per cent.

The average number of cures, per annum, was, for men, 30.32 per cent; for women, 39.13 per cent; and for both sexes, inclusive, 34.72 per cent. The average of deaths was, for men, 43.61 per cent; for women, 22.07 per cent; and for both, 32.84 per cent.

In regard to the ratio of cures, M. Esquirol says that there were 355 epileptics, paralytics and idiots among those admitted, all of whom were considered, at the time of their entrance, as incurable. Deducting this number from 1557, the total of admissions, there will remain but 1205 as under curative treatment. The proportion of cures, in this case, will be as 1 to 2.33 or equal to 42.14 per cent. The mortality, as exhibited by the table, is very great; but, in making out the per centage, the 492 patients who were in the Asylum at the commencement of the year 1826, and among whom, according to Esquirol, death made its greatest ravages, were not taken into consideration. If these be added to the number admitted, we have a total of 2049, to which the deaths, 546, are in the proportion of 1 to 3.75+, or 26.64 per cent. It is proper to remark that the insane of all descriptions are admitted, irrespective of age, grade of disease or its duration, or of the many other maladies with which it may be complicated. Again, very few persons attacked by "those acute diseases of the encephalon, which, as people say, *are always cured*, and which increase the number of cures of some similar establishments," are brought to this institution. From these facts we cannot expect the ratio of cures

to be very large. The mortality of men considerably exceeded that of women. That of the latter was much less in the last than in the first years of the period; and, at the same time, there was a corresponding increase of cures. These facts are very plausibly accounted for, in that the women occupied the new and commodious building, before mentioned, during the last five years.

We now present a table exhibiting the admissions and the results of treatment, in reference to the different seasons of the year.

Season.	Admitted.	Cured.	Died.	Per ct. of cures.	Per ct. of deaths.
Winter,	341	92	160	26.97	46.92
Spring,	406	123	139	30.29	34.23
Summer,	445	145	119	32.80	26.74
Autumn,	365	158	128	43.28	35.06
Total,	1557	518	546		

The average of admissions was 194 per annum. The maximum number in any series of the same month was in that of July, and of seasons, as will be seen above, in summer. The minimum of men, and of both sexes inclusive, was in winter; but that of women was in spring. The proportion of cures was greatest in autumn, and least in winter; that of deaths, greatest in winter and least in summer.

The next table shows the ages of the patients at the time of admission.

	Under 20	20 to 25	25 to 30	30 to 35	35 to 40	40 to 45	55 to 50	50 to 55	55 to 60	60 to 65	65 to 70	70 to 75	57 to 80	80 to 85	85 to 90
Men,	82	119	135	130	106	105	83	68	37	35	25	4	2	1	
Women,	42	55	72	77	102	90	65	46	36	22	10	2	4	1	1
Total,	124	174	207	207	208	195	148	114	73	57	35	6	6	2	1

Hence it appears that the greatest number of men during any period of five years was 135, and that between the ages of 25 and 30; the maximum of women was 102, between the ages of 35 and 40; and that of both sexes inclusive, 208, between the ages of 35 and 40. The number second in rank is found, for men, between the ages of 30 and 35, and for women, between 40 and 45. The number under 20 years occupies, for the men, the third rank, for the women the sixth rank. From these results, Esquirol is led to infer that insanity generally occurs at an earlier period of life in men than in women. It will be seen that more men than women enter this Asylum: the former are to the latter nearly as 3 to 2. This difference arises from the number of soldiers and marines who resort here to be cured. Esquirol has ascertained by his researches, that of 76,000 lunatics, in various countries, the proportion of men to women is as 37 to 38. The ratio differs in different nations, according to climate, habits and other modifying influences.

The number of patients in each variety of insanity, together with the results of treatment upon them, respectively, will be seen in the following table.

	Men.	Cures.	Per cent.	Women.	Cures.	Per cent.	Remark.
Monomania,	372	123	33.06	343	128	37.31	
Mania,	334	160	47.93	211	103	48.81	
Dementia,	219	1	.45	62	3	4.83	
Idiocy,	8			7			
Total,	933	284		623*	34		

* "Non-aliéné" to be added.

The cures in monomania of both sexes, inclusive, were equal to 35.10 per cent; those in mania, 48.25 per cent, and those in dementia, 1.42 per cent. The number of patients affected with monomania exceeded that of any other variety; but the per centage of cures has its maximum in mania.

Of the 1557 cases, the causes are assigned to 1375; they are as follows. "Hereditary, 337; domestic chagrins, 278; libertinage, excesses of all kinds, 146; abuse of spirituous liquors, 134; suppression of habitual evacuations, 54; onanism, 52; reverse of fortune, 49; abuse of mercury, 44; disappointed love, 37; fright, 35; political causes, 32; parturition, 28; exalted devotion, 24; blows on the head, 20; jealousy, 18; cerebral affections, 17; excess of study and night waking, 16; wounded self-love, 16; reading of romances, 13; insolation, 12; love of play, 5; suppression of habitual suppuration, 3; cholera morbus, 3; excess of joy, 2." Total, 1375.

Esquirol thinks that the proportion of cases arising from hereditary predisposition is usually greater than in this instance. In relation to those arising from political causes, we may remark that none occurred previously to 1830. In that year, the year of the last revolution, there were 13 cases of this nature, and 15 in 1831.

The following is a list of the several trades and professions previously pursued by the patients, with the exception of a few, in which there was but one each. "Proprietors (landlords) 307, tillers of the ground 99, masons 7, locksmiths 5, cabinet-makers 16, bakers 19, butchers 10, sellers of hog's flesh (charcutiers) 4, grocers 31, wine-merchants 26, tunnelers 3, tavern-keepers and cooks 24, jewellers 13, tailors and shoemakers 17, cap-makers and hosiers 5, hatters 5, modistes and cutters 35, merchants and clerks 81, tobacco-dealers 7, military officers 103, soldiers 124, conductors of public coaches and couriers 11, teachers 30, students 46, priests 11, "seminarists" 4, nuns 5, physicians 15, apothecaries 9, advocates 9, notaries 6, clerks (commis de bureau) 83, "clercs d'avoué" 10, ushers or door-keepers 6, literary men 3, painters 8, musicians 4, printers and book-sellers 15, domestics 35."

In the years 1826, 1830, and 1831, a much larger number of proprietors entered the Asylum than at any other time. This is explained by the difficulties, in the first of those years, arising from the order for the reimbursement of rents; and, in the last two, by the pecuniary losses necessarily augmented by the revolution.

Asylum at Milan.—Saint John's Hospital, at Milan, is, as is well known, one of the most extensive institutions of the kind in the world. It is probably exceeded by none. The principal edifice appertaining to it is within the city, but the department for the insane is without the walls, about a mile distant from the Porta Tosa. This building, formerly a convent of the Jesuits, was enlarged and converted into a Lunatic Asylum, about 55 years since. It encloses large courts, but those which are devoted to the

use of the patients are chiefly external to it. The wards are very large, some of them consisting of a hall, of ample width, running the whole length, and, beside it, two or three dormitories, each containing numerous beds. In others there are dormitories upon both sides of a narrow passage. The rooms are all lofty and well ventilated. In those where a fire is required, the stove is placed in the middle of the room and covered on all sides with bricks and surrounded by strong wooden frames or fenders. The beds for the furious have confining rings and straps at the foot and the sides, like those in many other Asylums. The mattrasses are made, some of straw, some of wool, and some of hair; and the beds and linen are as neat, though not so elegant, as those in any institution I have ever visited. In some of the dormitories metallic *pôts-de-chambre* are fastened by straps to the bedsteads. In the third story of the department for women there is a ward consisting of a suite of small rooms, each opening from a narrow passage. The bed in each of these is beneath the window, at the extremity opposite the door. Beside it, in the corner, is a stool of convenience, communicating with a balcony on the outside of the building, where a servant can attend to it without entering the room. The infirmary contains many beds, four of which alone were occupied. The patient in one of these was labouring under the pelagra, a disease which is endemic in some parts of the north of Italy. Many of the patients who were not confined in the infirmary have the goitre, the swellings being of various dimensions. I had previously seen many cases of this disease in Savoy and the canton of Vallais, in Switzerland. In one case which I saw at Sion, a town among the Alps and upon the road over the Simplon, the left lobe of the thyroid gland equalled in dimensions the head of the woman who was afflicted with it. One ward in the department of each sex, in the Asylum under notice, is devoted to convalescent patients. In these they remain forty days, previously to leaving the Asylum, for the purpose of confirming a cure. The bathing room contains four baths, three of them for one person each, the other sufficiently large to accommodate 28 at the same time. Each of the three former is cut from a single stone. They are for the most violent patients, and consequently have fixtures for the purpose of fastening the feet and the body. The large bath is also constructed of stone. The streams of the douches are very small, but they fall from a height of 12 or 15 feet. A horizontal jet, in which the water is thrown, with considerable force, completely across the room, is intended for a similar purpose as the douche. Being thus arranged it may be more easily applied to the various parts of the body.

Three physicians, two resident and one "attending," do the medical service of the Asylum. The number of patients, in Nov. 1838, was 420, of whom 215 were men and 205 women. The accommodations are sufficient for 500. The number of wards for either sex is six, and the patients are divided into three classes, the furious, the tranquil, and the incurable.

Regimen.—Breakfast; bread and cheese. *Dinner;* meat, five days in the week, and *polenta*—a pudding made of the meal of Indian corn—the remaining two days. Wine is a constant drink at this meal. *Supper;* bread, cheese and wine.

Manual labour is pursued to a considerable extent by the patients. A large garden belonging to the Asylum furnishes employment to nearly 100

of them during the warm season. In one room through which we passed, between 40 and 50 men were engaged in braiding *paglia di Spagna*—Spanish straw—for carpets. They worked as steadily and appeared as orderly as if they had not been lunatics. In another apartment several men were employed in making shoes, and as many more in tailoring. One of the latter was cutting clothes. Soon after we entered, he commenced talking to me, and conversed so rationally that I supposed him to be a sane person, acting as overseer to the others. Under this supposition, I inquired of him if all those under his care were insane, to which he answered in the affirmative. Perceiving that he conversed in French, I asked him if he was a Frenchman. He replied that he was not, and added, "Je suppose que vous êtes Anglais." "No," said I, "I am an American." "Ah! vraiment," he responded, dropping his shears and lifting both hands as if agreeably surprised, "vous êtes Americain. Eh bien, vous êtes très heureux, vous êtes *carbonaro*. Tous les Americains sont des *carbonari;* Je voudrais bien être dans ce pays là." Knowing the subject of the *carbonari* to be rather a delicate one in Italy, these remarks, together with some others, subsequently made, induced me to suspect him insane, and this suspicion, upon inquiry of the "direttore" of the Asylum, who accompanied me, proved correct. An artist, in the same apartment with the above mentioned, was occupied in cutting designs in paper. He showed me a representation of Bonaparte at St. Helena, and another of the garden of Eden. They were, indisputably, the most elegant workmanship of the kind that I have ever examined. I attempted to purchase the latter, but he informed me that it was already disposed of.

Many of the women were making lint, or charpie, for the use of the hospital in the city; and, in one apartment, there were about 90 sewing and spinning tow upon throstles whirled in the hand. For coercion and punishment the douche, confinement in beds, the restraint of limbs, &c. are effectual means. I observed one patient manacled with irons, and strong leather mittens upon his hands. He tears off his clothes whenever his arms are unrestrained. Several others had on strong leathern belts, to which their arms were fastened. In the same ward with these men there was another, very gentleman-like in appearance, who was exceedingly anxious lest I should go away without being aware of his dignity, or of the distinguished honour I had received in being admitted into his presence. Accordingly, he approached me, and repeated, with the utmost volubility, a long list of titles which *he graced*, such as "Prince" of one place; "King" of another; "Emperor" of a third; and, finally, "Ruler of the World." In his anxiety to furnish me with this important information, he followed us far out of the ward.

The only means of amusement which I saw were a swing and a *giustra*, if I rightly understood the word. The latter is so constructed that four, or, indeed, eight persons may turn horizontally in a circle, being situated at the extremities of two beams which cross each other at right angles, in the centre. These are in the principal court occupied by the men. The court is shaded by two parallel rows of sycamore trees, beneath which are many seats for the patients, permanently fastened to the ground.

Asylum at Venice.—Pertaining to the civil hospital at Venice, there is a large edifice exclusively devoted to the insane. It is situated upon the

eastern limits of the city, beside the celebrated church of *San Giorgio e Paolo*, and in the corner, at the confluence of one of the lagunes with the Adriatic. It is three stories in height, and entirely surrounds a court about 100 feet square. A corridor passes around this court, furnishing shelter from both sun and rain. In November, 1838, this Asylum contained 230 patients, all of whom were women. Upon the island of San Cervilio there is another establishment, for the men, of whom the number varies but little from that of the women. The patients at the Asylum for the women are divided into six classes, according to the species of insanity. These classes are not kept exclusively separate; on the contrary, some individuals belonging to every one of them may be found in the same ward. The colour of a strip of cloth attached, as an epaulette, to the shoulder of each patient, is a mark by which those belonging to the several classes may be identified. The classes are, 1st, *mania*, distinguished by a *red color;* 2d, *monomania*, distinguished by *deep blue;* 3d, *melanconico*, by *green;* 4th, *idiotismo*, by *orange;* 5th, *stupidita*, by *light blue;* 6th, *demenga*, by *yellow*.

As I was unable to procure all the data which would have been desirable, I shall speak of the apartments through which we passed, introducing, as appropriate opportunity offers, the other information which I possess.

1*st Story*.—Bathing-room, dining-room, kitchen, a dormitory containing many beds, and a room in which about 70 patients were spinning tow upon a hand throstle, as at Milan, and several others knitting and sewing. I noticed several, among these, who had the goitre. The room in which these were at work is warmed by a stove, which is entirely enclosed with bricks and mortar and surrounded, three or four feet distant, by a strong wooden railing. The women were at dinner when we went into the dining room. Their regimen is as follows, viz.—*Breakfast;* bread and soup;—*dinner;* meat, bread, rice and wine, every day, with the addition of potatoes or cheese, the two being given alternately. Suspended under the corridor, near the door of the dining room, there was a table of the appropriation of time. It is as follows:—

Week days.	A. M.	Sabbath and Feast days.
Rise and dress, ...	6½ to 7½ o'clk.	The same.
Breakfast, ...	7½ to 8	The same.
Doctor's visit, ...	8 to 9	The same.
Labour, ...	9 to 12	10 to 11 o'clock, attend mass.
	P. M.	11 to 12 " receive visits of friends.
Dinner, ...	12½ to 2	The same.
Study of numbers for play,	2 to 3	Recreation.
Labour, ...	3 to 4	Play at Tomboli and religious exercise.
Supper, ...	4 to 5	The same.
Walk, ...	5 to 6	The same.
Recreation, ...	6 to 7	The same.

2*d Story*.—The study of the physician, the infirmary, three large dormitories, like the wards of hospitals for the sick, and two or three small rooms for the accommodation of pay patients. The bed-steads are of wood throughout the establishment. The beds are without curtains. The infirmary is large, containing about 30 beds, most of which were occupied. It is one of the most complete and elegant apartments of the kind that I have seen. The floor is of Mosaic.

3*d Story*.—A suite of three rooms called "Sicurezza," and intended for the most violent patients. They contain about 50 beds, all of which were occupied. The bedsteads are made of plank, similar in form to those at

the Asylum at Utrecht, but differing from them, in that the bottom is a rack, thus permitting water to escape in all parts. A large box or trough is placed beneath each, to preserve the cleanliness of the floor. The patients in this department mostly lie upon loose straw, which is covered by a blanket. Many of them were confined by having their arms fastened to the sides and their feet to the foot of the bedsteads. The rooms in question overlook a portion of the Adriatic, the Lido and the cemetery of Santo Cristofero. There is another department in the third story called "Osservazione." It is intended for the convalescent patients and such as have recently been admitted. The latter remain here until the nature of their disease is satisfactorily ascertained. This department contains about 30 beds.

Asylum at Malta.—The island of Malta, the rendezvous of vessels traversing the Mediterranean, is said to be more populous, in proportion to its size, than any other portion of Europe, or, perhaps, of the whole world. The number of inhabitants to a square mile is five times as great as that of England. Its population, together with that of the small island of Gozo, in its immediate vicinity, is about 120,000. Of this number there are at present, as nearly as has been ascertained, 130 lunatics, or about 1 in 900. The only Asylum for the reception and treatment of them is at Floriana, in the suburbs of Valetta, the port of Malta. It is one of the several benevolent institutions for the poor which are under the direction and support of the government. For an introduction to this Asylum, as well as to the hospitals and charitable institutions of the island, I am indebted to Dr. Gouder, who accompanied me to them, severally, and afforded me every assistance in his power to obtain such information as was desired. The Asylum, that is, the building, is old, and, as an almost necessary consequence, very incommodious for the present method of treatment. Additions, however, have recently been made, and others are in progress; so that, eventually, and at a period not very remote, the defects will in a great measure be overcome. Baths have recently been constructed, the Asylum never previously having been supplied with them. The mattrasses of the beds are of straw, the most comfortable as well as wholesome material, in a climate like that of Malta, even for such patients as otherwise might be permitted to lie upon feathers. The bed-steads consist of two movable iron stands acting as supports to the boards upon which the mattrass is laid. In the morning these stands are placed beside the walls of the dormitory, the direction of the boards changed so as to be parallel with the walls instead of at right angles with them. Each mattrass is then doubled, or folded once upon itself, and the bed-clothes, folded also, laid upon it. This gives a neat aspect to the rooms, and leaves a much greater portion of the floor unencumbered than is the case with bedsteads of the ordinary kind. Adjacent to the building, and partially enclosed by it, are three courts, or yards, for the use of the patients. These are not large, but they are well cultivated. One of them is planted with orange-trees, which are large, and, when I was there, were in full bearing. Another of the courts is used as a kitchen-garden. It is well planted with a variety of vegetables, the labour required in its cultivation being performed by the patients. The regimen, which has been recently improved, is as follows:—*Breakfast;* coffee and bread; *dinner*, which is eaten at mid-day, soup, meat and fruit; *supper*, soup and fruit.

The number of patients in February last (1839) was 90, of whom 40 were men and 50 women. There are, at all times, more female than male patients. The superintendent informed me that he believes the proportionate number of the former to the latter to be as 3 to 2. The same ratio, agreeably to his opinion, is equally applicable to all the cases of insanity in the two islands.

A very large proportion of the patients perform some manual labour. The principal employments are gardening, sewing, knitting, spinning, and domestic affairs. Thus far, however, there has not been sufficient employment to keep the patients so constantly occupied as might be best for their own contentment, or most beneficial in promoting a cure. Amusements have not, hitherto, been introduced; and the same remark is equally applicable to reading and writing. When punishment is necessary, close confinement is the principal resource. For this purpose there are several small cells, supplied with no furniture, having a grating to the doors, and, for the admission of light, a small aperture in the outside wall, so high as to be inaccessible to the patient.

The principles of reform began to enter this institution in the year 1812. The use of chains, those implements of confinement and of torture, fit only for criminals and wild beasts, was then entirely abolished. Whenever bodily restraint is necessary, the camisole or straight-jacket is called in requisition. The pattern of this garment of coercion, used in this Asylum, is, in my opinion, an improvement upon all others which have come under my observation. Its principal peculiarity consists in two bands, one upon either side, attached to its lower border and passing around the legs. The whole garment is thus kept more effectually in its proper place. The patients have ever been, and still are, mingled together, irrespective of stage or intensity of disease. A division into two classes, 1st, the imbecile and the incurable; and, 2d, the curable, is about to be made. Most of the patients were remarkably quiet. There were, however, two exceptions. The first of these was a man at work in the court of orange-trees. He talked with superlative volubility as long as we would listen, the principal burthen of his conversation being a desire to get out of the Asylum for the purpose of taking a wife; and, inasmuch as fifty-four winters had begun to shed their frosts upon his brow, he feared that the time would soon arrive in which to him, as to Omar, the son of Hassan, it would no longer be possible to "marry a wife as beautiful as the Houries and wise as Zobiede." The other was a Frenchman, a member of a respectable family in France. He assumes to himself the title of Prince de Valois; says he has millions of property, and can afford to keep a numerous suite of valets. His clothes were in tatters. The superintendent informed me that, but a short time previously, he had received a good suit from his friends, but will not deign to wear them, because, forsooth, they were not made by the *tailleur du roi*—the king's tailor.

Many of the inmates of this Asylum died of the Asiatic cholera, during the ravages of that fatal epidemic in Malta, in the summer of 1837. The superintendent could not tell me the precise proportion of cures effected here, but thinks that it exceeds 50 per cent.

Asylum at Constantinople.—Connected with some of the mosques in Constantinople, there are buildings for the reception of the sick—a kind of

hospital, in which the poor who are suffering under disease may have their wants ministered to by the hand of charity. That which is adjacent to Sulimanyé, or the mosque of Suliman, is devoted exclusively to the insane. There, none but men are admitted; the women, according to the Turkish custom, as well as in conformity with the precepts of the religion of Mahomet, being kept in private seclusion. The building is but one story in height, and, like the cloisters of many Gothic cathedrals, and the khans or caravanseras of Turkey and Natolia, completely surrounds a central court. The entrances to all the rooms are beneath the corridor at which the court upon all sides is limited.

I visited this Asylum, if thus it may be denominated, during the feast of the Bairam, near the close of the last year, 1838, in company with two American gentlemen, residents at Constantinople. We entered the court, passing several miserably clad people, "sitting at the gate," not "to *ask* alms," but to receive it if voluntarily offered. Within the court were many people, mostly young men and boys, who had come, either for the gratification of curiosity, or to administer to the wants of the afflicted. We passed along the corridor to the first window. From between the bars of the iron grating with which this was defended, a heavy chain, ominous of the sad reality within, protruded, and was fastened to the external surface of the wall. It was about six feet in length, the opposite extremity was attached to a heavy iron ring, surrounding the neck of a patient who was sitting, within the grating, upon the window-seat. We entered the room and found two other patients, similarly fastened, at the two windows upon the opposite side of the room. It was a most cheerless apartment. A jug to contain water, and, for each of the patients, a few boards, laid upon the floor, or elevated three or four inches, at most, and covered with a couple of blankets, were all the articles of comfort or convenience with which, aside from their clothing, these miserable creatures were supplied. Although in the latter part of December, they had no fire; nor were the windows glazed, but close shutters attached to each, rendered it possible measurably to shield the inmates from severe weather whenever it might occur. The length of the chain of each patient is barely sufficient to enable him to lie down upon his comfortless bed of boards and blankets. Leaving this apartment, we proceeded successively to the others, twelve or fifteen in number, in all of which we found the patients in a very similar condition to those whom we had first seen. There was but one who was not chained. He was an elderly man, though still retaining much of the vivacity of earlier years. His long and profuse hair and beard were nearly white, and his complexion very delicate. He was formerly a priest of the Islam faith. He has been deranged and confined in this place nearly fifteen years, during which time he has thrice broken the chain with which he was secured. He is now alone in his apartment, within which no one is permitted to enter. He talked and raved incessantly, threatening to kill those who were making him their gazing stock. Like those in the apartment first mentioned, all the patients, with one exception, were without fire. The person forming this exception was one of the most hideous of unformed human beings. He has been in the Timar-hané, as this Asylum is called by the Turks, more than forty years. His hair and beard, both naturally abundant, curly, and black as ebony, appeared as if they had not been cut or combed since his entrance. They nearly concealed his face, and the former hung in a profusion of literally "dishevelled locks" about his

neck and shoulders. His head would have been a *nonpareil* for an original to the figure of Cain, in David's celebrated picture of "Cain meditating the death of Abel." He lay crouched upon all-fours, resting upon his knees and elbows, and holding his head and hands over a *manghale* of living embers. Whatsoever was said, whether addressed to him or otherwise, could only induce him slowly to turn his huge head, and present his hideous face more directly to view. His case was a striking example of dementia.

The patients, generally, appeared to enjoy pretty good health, aside from the lesion producing insanity. I was informed that a physician attends them regularly. There is a person who has the charge of supplying them with food, and they receive considerable attention from those who visit them. While we were there, many visiters were conversing with them, giving them articles of food, money and tobacco, and doing them a kind office by filling and lighting their "chebouks." These patients presented a diversity of species of insanity, and a variety of hallucinations. One of them was seated against the bars of his window, cross-legged, and with arms folded upon his breast, in all the counterfeited dignity of a sovereign, and the imperturbable gravity of a saint. It was evident by his demeanour that he esteemed himself one of the rulers of the earth—a Mahmoud, a Mahomet, or a Great Mogul. Upon being informed that I was an American, "Please," said he, turning towards me slowly, and without the slightest change of countenance; "please, effendi, to give my respects to the Sultan of America." This said, he assumed his former position, and maintained it with the most scrupulous exactitude.

There was another, one of the finest looking Musselmen that ever worshipped before the altars of Stamboul. His beard might acknowledge no rival in beauty, excepting that of Mahmoud the Second, and his eye possessed all the mingled fire and softness of the Orient. He was occupied in sewing. He was surrounded by several young Turks, but continued his labours, regardless of any of those who were present. The gentleman of our party who speaks the Turkish language addressed him, and at length won him, although with considerable reluctance on his part, into conversation. I have never witnessed a greater blandness and suavity of manners than in him. Upon being asked the cause for which he had come to that place, "Please, gentlemen," said he, "to be seated, and I will relate the whole history." Inasmuch as the uncovered stone floor presented an aspect rather uninviting, as a seat, we excused ourselves, and he was requested to proceed. Thereupon he placed himself in an attitude worthy of the orators of antiquity, and related a long story, in a most amusing but graceful manner. The whole substance of it was, that people began by calling him a fool; and, going from bad to worse, at length ended by bringing him to the Timor-hané of Suliman-yé.

Such, then, is the gloomy picture with which these sketches of some of the Asylums for suffering humanity are brought to a conclusion. It presents us with an additional motive for hoping that the stream of knowledge, which, taking its rise in Chaldea, has flowed to us, constantly augmented in its course, through Egypt, Greece, Rome, and the nations of western Europe, may reverse its course, or release a branch once more, to fertilize the desolate regions of intellect throughout the East. It is a proposition, the truth of which cannot, perhaps, be questioned, that, in proportion as a nation advances in intellectual cultivation, its practical benevolence assumes

a loftier standard. When, then, the light of science shall gild with brighter rays the empire of the Ottoman, we doubt not that the chains of the maniac will be broken, and his condition rendered such as to leave a hope, that alienated reason may reassume her proper throne.

The accounts of the several asylums being completed, this paper might here be brought to its legitimate termination. We cannot, however, dismiss the subject without making some remarks upon considerations more or less intimately connected with it. With regard to the prevalence of insanity in different countries, it is a fact, stated by several authors, and mentioned in a former paper published in this Journal, that, while the greatest number of lunatics is found in nations taking the highest rank in civilization, the least is in those living in a state of barbarism. In some savage nations it is never known. In Greece, at the present day, there are very few who are suffering under the disease. There is no asylum for their treatment in that country, and there were no patients of the kind in the hospitals of Athens, in the autumn of 1838. In Turkey, also, the number of the insane is, undoubtedly, very small, although we have no accurate data upon the subject. The people of that country are, however, to a greater or less extent, exempt from the influence of some of the most potent causes of the disease in the United States and the nations of the west of Europe. 1st. The Turks are a pre-eminently temperate people. 2d. They avoid the sallies of uncontrolled passion, and preserve a remarkable degree of equanimity of temper. 3d. Reverses of fortune operate less powerfully upon them than upon some other people; both because a misfortune of that kind is considered as a decree of Allah, and because, with a loss of fortune, a person does not lose his station in society. 4th. They probably are less affected by religious anxiety, doubt and perplexity. The practical religion of Mahomet chiefly consists in the observance of certain ceremonies, having fulfilled which, the Turk rests satisfied that he has performed his duty. It will be perceived that, under these four heads, are included three, at least, of the most powerful causes of mental derangement.

We possess but very little positive data in regard to the number of lunatics in nations generally. The population of the islands of Malta and Gozo is, as heretofore stated, 120,000. Of this number 130, or 1 in 920, are insane. It is stated in a recent work, by Professor Vander Kolk of the University at Utrecht, that there are 1828 lunatics in the several provinces of Holland. The population of the same territory is 2,253,794; which gives 1233 inhabitants to 1 lunatic. With what degree of accuracy the enumeration of the insane was made, I have no means of knowing. Their proportion to the population is small. If the number be correct, we may in part attribute the comparative exemption from the disease, to the general sobriety of the people, and their somewhat phlegmatic temperament. I was informed, by Samuel Tuke, that the proportion of the insane to the whole number of inhabitants in Scotland, was formerly considered to be as 1 to 1000. But by more recent investigation, it has been found to be nearly as 1 to 300. In most of the New England states that proportion has generally been estimated at 1 to 1000. This is now considered as too small, 1 to 800 being thought to approach nearer to the truth. It is said that, in England, the disease is more prevalent in the counties of York, Lancaster, Wilts, Stafford, Durham and Gloucester, than in any other parts of the country. In Wales, the number of insane, relative to

the whole population, is very small. The remark is also applicable to the Celtic tribes in other parts of Great Britain: and, where there is a union of Celtic with Saxon and Norman blood, the disease is scarcely known, except in cases of anormal structure, or malformation of the cranium. In these instances the individuals are idiotic. We have a remarkable example of endemic idiotism in the cretins of some of the cantons of Switzerland. Esquirol asserts that, in the southern provinces of France, the number of insane men exceeds that of insane women, while the reverse obtains in the provinces of the north.

In reference to the *causes* of mental derangement, I would direct attention to the question, whether political excitement and changes are productive of the disease? Some have denied that they exercise an influence towards such an effect. Without reference to other authority upon the subject, I would adduce the 28 cases mentioned by Esquirol among those who, in 1830 and 1831, were admitted into the asylum at Charenton. There had not been an individual case of the kind during the four years previous to 1830. Even admitting political causes, abstractly considered, to possess no direct tendency to the production of insanity, still the consequences which but too often result from them, must inevitably exercise a powerful influence to that effect. Such are mental anxiety, the loss of property and of friends. Who can for a moment doubt that, at the time when France was menaced by powerful foes upon every hand; torn by dissensions, and bleeding under a civil war; when hundreds of princely estates were confiscated, and all the rich were compelled to relinquish, not only a tithe, but a third part of their wealth, to support political movements to which they were opposed; when the country was filled with guillotines, and whole cities were doomed to destruction; that there was a greater tendency to mental alienation than in the time of peace and political quietude? The following is an interesting case of derangement which occured during the difficulties alluded to in France. It is related by the Viscountess Beauharnais, afterwards the Empress Josephine. The Abbé Capdeville became interested in an English orphan, eight years of age, and took him to educate. The boy, who, in the account, is called Tommy, was so kindly treated, that he conceived a strong attachment for his benefactor. At length, the Abbé was imprisoned in the Carmelites, and Tommy obtained permission to be shut up with him. One day, when the Abbé and other priests, his fellow prisoners, were at prayers in the chapel connected with the building, a mob of revolutionists broke into the place. Tommy took a station beside the kneeling Abbé, and would not remove. "The ruffians having forced open the doors, and broken the windows, penetrated by several points at once; the pavement of the chapel, and the steps of the sanctuary, were speedily inundated with blood. Capdeville, struck immediately after the bishop, fell at his feet, and, extending a mangled hand to Tommy, expired as he looked upon him. That look was a last blessing.

"Already the poor youth, or rather child—for he is not yet sixteen—exhibited unequivocal symptoms of alienation of mind: on the death of his friend, a fixed insanity appeared. The unfortunate Abbé, who had knelt apart from his companions in martyrdom, having been engaged in officiating, had fallen with his head supported upon the upper step of the altar, and his body extended across the others; the left hand was pressed against the heart, and the right, as I have already said, extended towards his pupil. The blow which had finally deprived him of life, had been so

rapid in its operation, that death had not effaced the habitual expression of benevolence which lighted his placid countenance. He seemed to smile and slumber. By some sudden changes in the reasoning faculties, Tommy became convinced that his friend slept. Instantly, as if by enchantment, the scene of slaughter disappeared from before his vision; he knelt down by the side of the bleeding corpse, waiting its awaking. After three hours of watching, and as the sun sank below the horizon, Tommy went to seek his harp, and again sat down beside the remains of his friend, playing melancholy airs in order to hasten his awaking, which appeared to him long in taking place. While thus employed, sleep stole over his own frame, and the charitable hands that removed from the despoilers the bodies of the martyrs, carried away Tommy, and laid him on his bed. There he remained eight and forty hours in a kind of lethargy, whence, however, he awoke with all the appearances of soundness of body and mind. But, if health had been restored, reason had fled forever.

"In commemoration of his pious madness, a free asylum has been granted to him in this house, where he passes the day in silence till each afternoon at three o'clock. The moment that hour strikes, Tommy, who ordinarily walks slowly, runs to seek his harp, upon which, leaning against the ruins of the altar still remaining in the chapel, he plays his friend's favourite airs. The expression of his countenance, on these occasions, announces hope; he seems to expect a word of approbation from him whose remembrance he cherishes: this hope and this employment continue until six o'clock, when he leaves off abruptly, saying '*Not yet*, but tomorrow he will speak to his child.' He then kneels down, prays fervently, rises with a sigh, and retires softly, upon tiptoe, that he may not disturb the imaginary repose of his benefactor. The same affecting scene takes place day after day; and, during the intervals, the poor boy's faculties seem completely absorbed, till the fatal hour calls forth the same hopes, destined for ever to be chilled by the same disappointment."*

It is a fact worthy of notice, that of the 1557 cases admitted at the Asylum at Charenton, and of which the causes of 1375 are assigned, not one is attributed to religious doubt, anxiety or perplexity. On the other hand, of 678 cases treated at the Massachusetts Lunatic Asylum, at Worcester, no less than 53, equal to 7.81 per cent, are stated to have arisen from those causes.

It is somewhat surprising that there should be so great a difference as actually exists, in the Asylums for the insane, in the use of the bath. As will have been observed, there was no bathing-room at the Asylum at Antwerp; whereas, on the contrary, the apartments of this kind in the institutions at Paris are very extensive. The French, pre-eminently a *bathing* people when in health, are not the less so in sickness, especially in mental diseases. The bath and the douche, judiciously applied, must, we believe, be of no inconsiderable utility.

Music has been tried as a curative means in many Asylums. We should suppose, *a priori*, that it might be attended with beneficial results. In order, however, that this should obtain, it must be managed with a most discriminating judgment. It must be adapted to each patient, according as he is depressed or exalted; otherwise, the melancholy in the former case

* Vide Memoirs of the Empress Josephine, by John S. Menres, L. L. D. Harpers' edition, p. 88 to 93.

might be augmented, and the exaltation, in the latter, increased to fury.—Esquirol, whose experience in this respect is undoubtedly greater than that of any other person now living, remarks, "I have tried it, (music) in every manner, and under circumstances the most favourable to success. Sometimes *it has irritated the patient even to fury;* often it has tended to divert the attention, but *I cannot say that it has contributed to a cure.* It has been advantageous to the convalescent." * * * *

"Having made so many partial applications of music, I was desirous of attempting it upon many persons, simultaneously. My experiments were made during the summer of 1824, and that of 1825. Many distinguished musicians of the capital, seconded by the students of the Conservatory of Music, assembled at our Asylum (La Salpêtrière) many Sabbath-days in succession. The harp, the piano, the violin, some wind instruments, and some excellent voices, combined to render our concerts as agreeable as interesting.

"Eighty insane women, chosen by me from the convalescents, the maniacs, the tranquil monomaniacs, and some lypemaniacs were commodiously seated, facing the musicians, in the dormitory of the convalescents. * * * * Airs of all kinds, of all metres, and upon all keys, were played and sung, varying the number and the nature of the instruments. Some great pieces of music were also executed. My patients were very attentive, their countenances became animated, the eyes of many beamed with additional brilliancy, but all remained tranquil. Some tears were shed. Two of the patients asked permission to sing an air, and to be accompanied: the request was granted.

"This novel spectacle was not without influence upon our unhappy patients, but we obtained no cure, *not even an amelioration of their mental condition.* After these concerts, each of which lasted two hours, the musicians went into the apartment among the patients and executed, upon wind instruments, various well-known, popular airs, of a martial or sentimental character. A great number of the women became excited, exalted at the sound of the instruments, and many, among the furious, formed circles in order to dance. This excitement was transient, and passed off almost as soon as the music ceased."

After some further observations, the author finally concludes, "If music does not cure, it diverts, and consequently soothes. It produces some alleviation, both physical and moral; it is evidently useful to the convalescent, and consequently it is not necessary to discontinue its use."

The human mind is prone to extremes, as the musical chord, which, if deviated from the line of tension, recoils to nearly the same extent upon the opposite side. And, to pursue the simile, the harmony of the former, like that of the latter, is the most agreeable when those extremes are least. The most intimate friend, if once estranged, to the "shame and confusion of face" of our kind be it spoken, is liable to become the most implacable enemy. Some physicians, discarding the antiphlogistic, adopt the ever-stimulant method of treatment; and others, once accustomed to drugging their patients to a most liberal extent, reject this practice and adopt the infinitessimal principles of homœopathy. Governments fall from despotism into anarchy, and from anarchy return to despotism. In the modern laudable crusade against distilled spirits, some of the leaders in the cause, the hermit-Peters of the warfare, have banished not only spirits, wine and fermented liquors, but tea, coffee, meat and condiments, by their code of

dietetics. In all these instances, perhaps, there is a "golden mean," which is better and wiser than either extreme. In the moral treatment of insanity care is required, lest, in the recoil from the barbarity of former times, the opposite error be not avoided.

These remarks have been suggested by the account given by Esquirol of the introduction of theatrical entertainments at Charenton. This was done about the year 1805, and continued until 1811. A theatre was constructed, comedies, operas and dramas were enacted, and, occasionally, fire-works were displayed. "Everybody was pleased with it; great and small, wise and ignorant, were desirous of being at the exhibition given by the lunatics of Charenton. All Paris flocked there for several years; some from curiosity, others to judge of the prodigious effects of this admirable means of curing the insane. The truth is, this means effected no cure. * * * Those who were to witness the exhibition were selected by favour. This excited jealousies, quarrels, and bitterness of feeling. Hence occurred sudden explosions of delirium and returns of mania and of fury. * * * That which passed at Charenton teaches us sufficiently upon this subject. How many were the relapses, how numerous the paroxysms of fury, provoked by these theatrical representations! Never have they exhibited to us patients cured by this mode of treatment."

REVIEW.

ART. X.—*Leçons sur le Sang, et les Alterations de ce liquide dans les Maladies graves.* Par PROF. MAGENDIE. Bruxelles, 1839.
Course of Lectures on the Blood, and on the Changes which it undergoes during Disease. Delivered at the College of France in 1837–8. By M. MAGENDIE. London, 1839.

NOTWITHSTANDING the blood has been a subject of curious speculation from the most remote period, our knowledge of its physiology and pathology still remains extremely defective. On many points connected with these important subjects, we are, in fact, in entire ignorance. Upon even the composition and physical properties of the blood, and the forces by which its circulation throughout the organism is effected, discordant opinions are entertained by the most distinguished contemporary physiologists; while, of the modifications it undergoes during health, its various morbid conditions, and their influence in the production or modification of diseased phenomena, we know absolutely nothing. Every thing that has been heretofore advanced in relation to these particulars, can be viewed in no other light than specious hypotheses, unsupported by facts.

It is evident, therefore, that few subjects present a more extensive field for investigation, or in relation to which may be anticipated results of greater importance in a physiological as well as pathological and therapeutical point of view, from a well devised and cautiously performed series of experiments and observations. Hence the lectures on the blood by M. Magendie, possess a peculiar interest; more especially as the statements and opinions contained in them, are professedly deductions from careful and repeated experiments and observations, many of them of a novel and very striking character, performed by the lecturer in the presence of his class.

M. Magendie has studied the blood, to use his own words, not only in chemical apparatuses, but in the living animal, and in the human subject labouring under disease; every question connected with it is examined by him in its physical, chemical, mechanical and vital bearing; life, as he remarks, being the result of these different modes of action.

By the experiments and observations of the lecturer, many particulars in relation to the properties of the blood, and the forces by which it is circulated, that have heretofore been subjects of doubt or of dispute, are fully established, and several new facts in its physiology elicited. His experiments and observations upon the effects of various abnormal conditions of the blood, present, likewise, many important facts for the consideration of the pathologist.

Notwithstanding M. Magendie declares, in his second lecture, that he does "not believe that disease is ever developed without some modification or other existing in the blood;" yet he repeatedly denies any intention of

ascribing to morbid changes in the blood every diseased condition of the organism.

The whole of his illustrations and reasoning, and many of his experiments, prove, however, that he considers a morbid state of the blood to be, if not the invariable cause of the diseased states of the organism, at least the chief agent in the production of the several organic lesions which take place in the course, or towards the termination of disease. The various local affections discovered after death, heretofore ascribed to inflammation and its consequences, M. Magendie ascribes, in fact, in every instance, to the physical effects resulting from a change in the composition of the blood, from the suspension of its circulation in the capillaries of the part, and from its infiltration into the surrounding tissues. He would appear to consider, indeed, a large proportion of the phenomena of health and disease to be the result rather of physical than of vital forces.

"My experiments," he remarks, (Lecture 2d,) "have proved that various actions, habitually called the effects of *vitality*, are purely *physical.*"

He pronounces (Lecture 14th) the "unvarying attempt to discover in the vitality of our tissues, the cause of the majority of the disorders to which they are liable," a "most serious error."

In another part, he refers our defective acquaintance with the physiology of the animal organism to our ascribing many phenomena to presumed vital forces, which are in fact of a purely physical character; which, to a certain extent, is unquestionably true.

"Turn where they will," he remarks, (Lecture 5th,) "our medical men find nothing but vitality, just as if the organisation of the frame were not quite as worthy of our admiration, regulated by physical laws, as by a jumble of pretended vital properties. They will not allow a membrane to be a membrane; they refuse to believe that when a membrane is brought in contact with liquids, either imbibition or exbibition follows. No, that would be too simple; they must have exhalent vessels, and absorbent vessels, and they must endow these vessels with intelligence, and make this intelligence decide on the fitness of this or that substance to enter their cavity."

That the changes which occur in the blood, in various states of disease, are more decided and of far more importance in a pathological and therapeutical point of view, than they are usually esteemed by physicians of the present day, our own experience has taught us to believe. We view, therefore, the experiments of M. Magendie upon the effects resulting from various abnormal conditions of the blood, artificially produced, as in the highest degree interesting. With many of the conclusions he would appear to draw from these experiments, we cannot, however, coincide.

To do full justice to the pathological views of the lecturer, and to show how far he is willing to admit a deterioration of the blood to act in the production of disease, we present the following extracts from his third lecture.

"I am far from maintaining that all diseases originate in altered conditions of the blood. Such an opinion would be grossly absurd. Our organs are liable to be influenced by a number of agents which directly modify, as it were, their texture. Thus, for example, intense cold causes the contraction of the pulmonary vesicles, and by this purely physical action, the circulation is retarded, and may be temporarily stopped. It is not necessary for me to enumerate the series of phenomena that ensues.

"On the other hand, if the temperature be too high, the capacity of the ves-

sels is increased, and not only is the circulation affected thereby, but the composition of the blood may be modified to such an extent as to produce affections analogous to those just alluded to. Here, then, are two phenomena, perfectly physical in their nature, to which a considerable number of local lesions are traceable.

"Hence, local diseases may originate either in an alteration of the blood, or of the tissues of the organs themselves. The distinction between these two sources of topical affections should never be lost sight of, especially in regulating the treatment.

"There are other causes of local disorders wholly distinct from those I have mentioned. Thus, the chemical injuries effected in the stomach by the concentrated acids, will never be confounded by any one in his senses, with disorders induced by a morbid condition of the blood, no more than will the mischief caused by the violent drastics that certain individuals have the signal effrontery to extol as sovereign balms for every variety of complaint.

"These cursory observations will suffice to show you that there certainly exist diseases brought on by a morbid condition of the fluids, as well as others by a primitive alteration of the solids; they will, besides, convince you that I am neither exclusively a humourist nor a solidist."

In endeavouring to present to our readers a summary of these lectures, we shall be obliged to confine ourselves to the leading facts embraced in them, and this without any attention to the order in which they occur. The minute description of the progress and result of varied experiments, performed in the view of the class, with which the lectures abound, and the frequent repetitions to which the plan pursued by M. Magendie in their delivery necessarily gives rise, prevent any regular analysis of the subjects embraced in each.

The circulation of the blood throughout every portion of the body is ascribed by M. Magendie to the force of the heart, aided by the elasticity of the arteries, the action of the muscles, and the respiratory movements. The supposed sorbent power of the venous radicles, the independent action of the capillaries, and the motive powers of the globules themselves, which have been described as so many powers concerned in effecting the circulation of the blood, he has shown to have no existence excepting in the imagination of certain modern physiologists. The arteries, capillaries, and veins, he has proved to be altogether passive organs, the blood in the one set of vessels being acted upon by the same forces as it is in the others.

M. Magendie's experiments on the circulation of the blood are rendered more exact and interesting by the employment of an instrument invented by M. Poiseuille, the hæmodynamometer.

"It has received its name from the purpose to which it is applied, namely, the measurement of the force that moves the blood (αιμα, *blood*, δυναμις, *force*, μετρον, *a measure.*) It consists of a glass tube presenting a horizontal branch, a descending vertical branch, and an ascending branch; these are curved, so as to form a quarter of a circle and a semicircle, at two different points. A certain quantity of mercury is placed in the tube, and it is evident that when the instrument is in a vertical position, the upper surface of the mercury will be on the same level in both branches. But if the blood be allowed to enter into the horizontal branch by an orifice communicating with the interior of a vessel, it will press on the surface of the mercury; the metal will, therefore, be depressed to a certain point in the descending branch, and will rise to the same extent in the ascending branch. The degree of depression and elevation is estimated by two scales, graduated by millimetres, attached to the vertical branches of the instrument. When the apparatus is about to be used, the horizontal branch is

filled with a saturated solution of subcarbonate of soda, which M. P. found, after a variety of trials, the best material for preventing the coagulation of the blood. A small brass tube receives into a concavity the extremity of the horizontal branch of the glass tube, and is fixed to it with Spanish wax. At the other extremity of this little brass tube, is a screw, intended to pass into another brass tube, one extremity of which presents a cavity of the same form as the nut of the screw; the other is free, intended for introduction into the interior of the vessels, and provided with a prominent rim. As the slightest inclination in the instrument would cause a variation in the height of the columns of mercury, a leaden wire is adapted to it, to secure it in an accurately vertical position. When we wish to bring the instrument into communication with the blood, we lay bare an artery, seize it between the fingers, taking care first to pass a ligature round it, and make a longitudinal incision beyond the compressed point. The lips of the wound in the vessel are next laid hold of with a forceps, and separated from each other so as to render the orifice as circular as possible. The tube is then introduced, and the artery tied below the rim of the instrument. The moment we cease to compress the vessel between the fingers, the blood passes from it into the tube, mixes with the carbonate of soda, and so trasmits the force of its impulsion to the column of mercury."—Lecture 6th.

One of the most interesting facts established by this instrument, is the uniform amount of pressure exerted by the blood upon the coats of the arteries in every part of the body; those in the immediate vicinity of the heart being distended by an equal force with those the most remote from it. M. Poiseuille made the experiment on the carotid, and on the muscular branch of the thigh of a horse, and notwithstanding the very great dissimilarity in the diameter, and distance from the heart, of the two tubes, the displacement of the mercury was exactly the same in both.

"This equality of pressure throughout the entire arterial system is," observes M. Magendie, "an extremely important fact, in a practical point of view. It shows that if the practitioner desire to lessen the quantity of fluid in circulation, it is of little consequence what vessel he opens; for the equilibrium of pressure is simultaneously re-established in all the vascular tubes."—Lecture 6th.

"This law of the recovery of the equilibrium of pressure," he remarks in a subsequent lecture, (the 9th) "is of fundamental importance in the study of the circulation. Practitioners who are unacquainted with it, fancy, in many cases, that by following certain rules in the employment of bloodletting they shall obtain extraordinary advantages, but they sadly deceive themselves. When, for instance, they have a case of apoplexy to treat, they fix on the temporal artery in preference to any other vessel, whence to deplete the vascular system. As that vessel is the nearest to the seat of the lesion, argue these reasoners, it must hold the cerebral circulation more immediately under its dependence."

"If the circulation were formed of a series of rings, mutually independent of each other, we might rationally open one vessel rather than another, according to the site of the disorder we had to combat, but the chain formed by the arterial tubes is perfectly continuous throughout the frame. Whether you bleed from the temporal or the tibial artery, the effects will be mechanically the same in respect of the circulation of the brain. The preference given the former of these vessels is justified by its superficial position, which renders it easily accessible; but as regards the therapeutical influence of its division, it can lay claim to no real superiority. If you represent by five the diminution of pressure in the temporal, you must represent by five also that in the tibial artery." —*Ibid.*

Not only does this equality of pressure exist throughout the arteries of the same animal, but it is also similar in animals differing considerably in magnitude and in strength. M. Poiseuille found that the hæmodynamometer when applied to the arteries of a dog, rabbit or guinea pig, indicated the same amount

of pressure as when applied to those of the horse. So that a heart weighing one or more ounces, transmits the same amount of pressure to the walls of the vessels, as one weighing six or seven pounds.—Lecture 6th.

"These are," the lecturer remarks, "no doubt, most curious facts; still they are comprehensible, for the question of which they involve the answer, is not to calculate the total force of the heart, but the surface of the column of blood displaced."—*Ibid.*

The circumstances that modify the pressure of the blood, are, according to M. Magendie, referrible to two principal causes, the mass of liquid in movement, and the force of impulsion. We must also take most accurate note of the movement of respiration. M. Magendie found in his experiments, that the force with which the blood moves in the arteries, is diminished during inspiration, but augmented during expiration; and that during the action of coughing also, the movement of the blood is accelerated. Hence he remarks, the heart is "the constant agent of the circulation; but the respiratory movements exercise so powerful an influence in this way, that during deep expiration, the force that moves the arterial blood, becomes almost double as great as in the normal state."—Lecture 6th.

Aware that the amount of fluid contained within the blood vessels cannot be increased without the vessels suffering an augmented pressure, M. Magendie believed it possible to cause at will the elevation or descent of the column of mercury in the instrument, by adding to or subtracting from, the circulating fluid, given quantities of liquid. By drawing blood from the blood vessels, the amount of pressure was evidently diminished in proportion to the amount abstracted; but the reverse experiment, augmenting, namely, the amount of fluid in the veins, did not present the anticipated result; a quantity of tepid water was thrown into the jugular vein of a dog, but the instrument indicated, instead of an increase, a considerable diminution of pressure. In this experiment, M. Magendie observes,

"The volume of the blood was, no doubt, rendered more considerable than before, but the energy of the heart's contractility was diminished by the presence of the water. My injection had the same effect as the diluents used in practice, for the purpose of moderating the violence of fever; the augmentation of the aqueous part of the blood weakened the force of impulsion of the left ventricle, and the pressure, in consequence, became less than previously throughout the entire system."

Hence, he infers that, "the volume of liquid in the vessels does not contribute so much as the energy of the heart's contractions to the arterial pressure." Lect. 7.

On injecting an infusion of coffee into the jugular vein of the dog, which was the subject of the above experiment, a notable rise was produced in the column of mercury; on the subsequent injection of two drachms of brandy and water, the mercury was found to sink a few degrees. From these experiments, however, as the lecturer very properly remarks, no positive conclusions can be drawn.—Lect. 6.

To ascertain the effects produced on the arterial pressure, when, instead of water or any other debilitating fluid, blood drawn from an animal of the same species as that on which the experiment is made, is injected into the vessels, M. Magendie took two dogs, of about equal strength, but somewhat differing in age, and gradually injected the blood taken from the carotid of the one into the jugular vein of the other, to the amount of more than a pound, without, however, obtaining any indication of an augmenta-

tion of pressure on the arteries—the elevation of the mercury so far from being increased, towards the close of the experiment, oscillated below its normal level.

"This," Magendie remarks, "is really difficult to comprehend, and I see no means of accounting for it, except by supposing that, instead of causing a simple mechanical effect, we brought some vital phenomena into play in the vascular system, by our introduction of a liquid, differing from that which ordinarily circulates through the frame. The blood of one dog is not precisely similar to that of another; there is, possibly, an individuality in the liquids of every animal, as there is in the external form of its body. The age, the size, the degree of strength, the kind of nourishment it habitually uses, give to each individual special and distinctive characters. The moment the foreign fluid touched the muscular fibre, it must have modified its contractile force, and hence, without doubt, arose the alteration in the energy with which the heart propelled the blood into the arterial system."—Lect. 9.

Another experiment was performed, in which the orifice of a syringe, capable of containing three-fifths of a pound, was introduced into and firmly fixed by ligature, to the carotid of a dog, so that it could be filled with the blood of the artery, and immediately throw back the same into the vessel, without any interruption to the contact of the contents of the syringe with the blood in circulation. The hæmodynamometer was applied to the femoral artery. Whenever the syringe was filled, and the volume of blood in the vessels of the animal in consequence diminished, the mercurial column of the instrument fell, and immediately rose again on the contents of the syringe being passed back into the artery. M. Magendie attempted to perform a similar experiment upon the jugular vein of the same dog, but failed in consequence of the instant death of the animal from the accidental introduction of a quantity of air into the vein. Lect. 9.

M. Poiseuille has established the following general theorem:—

"The total static force which moves the blood in an artery, is exactly in the direct ratio of the area of the circle of that artery, or in the direct ratio of the square of its diameter, no matter what may be its position in the economy."—Lect. 6.

After remarking that the velocity with which the blood moves through its vessels, has not yet been accurately determined, and that hence we are unable to allot to the pressure, and the velocity of that fluid, the influence that respectively belongs to them;

"You are aware," continues M. Magendie, "that the pressure and velocity are not always proportionate. The interest of these questions is not merely scientific; a number of useful precepts, bearing on the practice of medicine and surgery, may be derived from them. When, for instance, you tie an artery, the pressure you thereby remove from one point of the system, is distributed through its entire extent. The vascular apparatus forms a chain of which all the links are, in this respect, reciprocally vicarious. Thus, when you interrupt the circulation in the chief trunk of the lower extremity, for the cure of popliteal aneurism, the skin almost immediately acquires a burning heat, the face becomes injected; the pulse beats with force, the patient complains of flushes of heat; in short, all the signs of superactivity of the circulation ensue. This train of symptoms cannot be ascribed to the simple fact of a painful operation having been undergone; undoubtedly the wound has something to do with it, but the chief source of the fever is to be found in the modification of the hydrodynamic phenomena of the circulation. The force brought into play by the contraction of the left ventricle, struggles in vain against the resistance of the ligature; but that force is not uselessly expended; it is divided into as many partial forms as there

are sanguineous tubes, and increases the energy of the pressure in every part of the arterial system. Hence, the fulness of the pulse—hence the pulsations of which the patient is conscious, and which surgeons, who are generally more dexterous as operators, than as able physiologists, have been so embarrassed to explain. There are a number of cases, wherein the circle of the circulation is contracted. When you amputate a leg or a thigh, you diminish, by a fourth or a third, the extent of that circle; the pressure is, in consequence increased, as the tubes on which it acts are diminished in number. These mechanical notions will find their application in the precautions which it is expedient to take before and after operations of this nature. They prove that it is wise to disgorge the vessels artificially of some of their contents, in order to obviate the effects of the sudden augmentation of internal pressure. Under such circumstances, blood-letting may be of great service; managed with intelligence and discretion, it becomes a powerful auxiliary in therapeutics."—Lect. 6.

To prove, that by diminishing the extent of surface over which the blood flows, the force of its progression is increased, a number of experiments are detailed in the 6th lecture, in which, by pressure or ligature, the passage of the blood through different arteries was arrested, and the effects on the arterial pressure determined by the instrument contrived by M. Poiseuille. By these experiments it is shown, that when the static force of the blood is annulled in any given point, the impulse of the heart really becomes, as it was fair to anticipate would be the case, more energetic in the portion of the arterial system still traversed by the blood.

After referring, in lecture 9, to the proposition of M. Baudelocque, to apply compression, through the abdominal parietes, upon the aorta, as a means of arresting uterine hemorrhage after delivery, the lecturer proceeds to remark as follows:—

"The suspension of the flow of blood through so voluminous a vessel as the aorta, has a double effect; it immediately arrests the hemorrhage on the one hand—on the other, it diminishes the extent of the circulation; and, consequently, increases the pressure in the arteries situated above the compressed point. As the brain receives more blood, it is evident that the cerebral functions will acquire fresh activity: and, accordingly, we find that the patients recover their consciousness—that the face reassumes its natural colour, and that the prostration gradually ceases."

"It has been noticed, that one of the chief means of restoring an individual in a state of syncope to consciousness, is to place him in a horizontal position; in that attitude, the circulation requires less effort than in the vertical position, which easily explains its favourable effects. Perhaps we might act more directly on the encephalon, by compressing a large trunk; such as the brachial, the femoral, or even the aorta; in these subjects. According to the principles of hydrodynamics, the pressure of the cerebral vessels would become more powerful, and the nervous system consequently receive an increase of excitement."

Among the consequences which are found occasionally to follow the ligature of the primitive carotid in the human subject, is enumerated cerebral hemorrhage. M. Magendie relates one case, (Lect. 10) and seven or eight others are on record. In the Surgical Dictionary of Samuel Cooper, several are referred to; the hemorrhage in these instances, it is difficult to explain, inasmuch as in M. Magendie's experiments, the ligature of one of the carotids, produced no appreciable increase of pressure, and when both carotids, and one of the jugular veins were tied, the pressure was evidently diminished.

Having shown that the arteries perform a merely passive part in the great function of the circulation, M. Magendie proceeds in lecture 9th, to

consider the question, whether the heart's impulse is propagated from the arteries to the capillaries?

"As these two classes of tubes are continuous throughout," he observes, "it is extremely probable that such is the case; for, speaking in a mechanical point of view, it seems likely that the same force which acts at the origin of a system of ducts will continue its action to their termination.

"It does not require to be a profound anatomist to ascertain that a free communication subsists between the arteries and veins, through the medium of the capillary vessels. Push an injection into the spleen or kidney by the arteries, and it will return by the veins. None will deny this fact. But the litigated point respects the force that causes the fluid to move through the innumerable intervening canals. Well, you will see, that the heart acts in the living subject, as the piston of this syringe on the dead body, and they who refuse to acknowledge the reality of its action in this way, are in truth, refusing to admit the testimony of experimental observation.

"The further we advance from the central organ of impulsion, the more we find the rapidity of the flow of the blood diminished. The jerking movement of the arterial blood is very evident in the large trunks; it becomes less so in the secondary tubes, and is totally changed into a uniform motion towards the capillary vessels. Once arrived in the veins, the column of liquid moves extremely slow. The walls of these vessels are scarcely pressed on by the current that traverses them, and are collapsed in the ordinary state.

"The slackened flow of the blood in the capillaries, is a point which had not been fully explained previously to the latest experiments of M. Poiseuille. To that young physiologist we are indebted for some most interesting microscopical observations on the manner in which the liquids conduct themselves while traversing the capillary vessels.

"Among the most important facts he has discovered, are the following:—Whenever a liquid moves in a tube, a certain layer of it adheres to the walls of that tube, and remains motionless. If the course of the blood be examined under the microscope in an artery which has coats sufficiently thin to admit of the passage of luminous rays, the rapidity of the movement of the globules is found to be greatest in the axis of the vessel. This rapidity diminishes gradually, as we pass from the centre to the circumference of the vessel. There is a transparent space next to the internal tunic, which varies in breadth from the tenth to the eighth of the diameter of the tube, and is filled with the serum of the blood."

That this is no optical delusion, is shown by the movement of the globules. Some are occasionally detached from the central current, and brought thus nearer the peripheric motionless stratum; and, at the same time, their movement becomes much less rapid. Such as are jostled by their neighbours are dashed against the walls of the vessel, and become stationary. Hence, a translucid liquid, holding them in suspension, really exists, and communicates its immobility to them.

"In a large vessel, these different degrees of rapidity of the fluid molecules have hardly any influence on the movement of the central current. But if you suppose a tube of considerably less diameter, a greater relative quantity of the liquid will be motionless, and consequently, the central column moves in a comparatively narrow area. When the calibre of the vessel is still smaller, the stratum adhering to its walls, obstructs its interior almost completely, and a mere filament of fluid can, with difficulty, force itself a passage in the centre. Finally, when the degree of tenuity becomes extreme, the tube ceases almost wholly to be permeable to fluids."

"The adherence of a motionless stratum to the walls of the capillary vessels, is a capital fact, inasmuch as it explains how the course of the blood becomes slackened in those tubes. In order to surmount this obstacle, the left ventricle is obliged to dispense a part of its contractile force; but its power is far from

being exhausted, for it extends its influence even to the veins. Circumstances exist, under which the ventricular impulsion is quite as evident in the veins as in the arteries. Now, this impulsion cannot pass from the latter to the former, without affecting the capillary system in its way. If the movement of the blood in the veins were due to the action of the capillaries alone, the motion of the liquid in them would be uniform, and not in harmony with the causes which increase the force of movement of the arterial blood. The degree of the heart's energy, the respiratory movement, the volume of the liquid, would all of them be without influence on the venous circulation. Now we have testimony of daily observation, in evidence of the contrary. It is positively ascertained, that whatever acts on the flow in the arteries, acts also on that in the veins. My experiments had already demonstrated the existence of a close relation between those two great systems of tubes, when M. Poiseuille, by his late researches, gave us a mathematical solution of these important questions, and proved the futility of the theory, founded on an assumed action of the capillaries."

According then, to M. Magendie, the movement of the blood in the veins is chiefly effected by the heart's action, and by the elasticity of the arteries, which is itself brought into play by the contractions of the left ventricle. Among the accessary powers which aid in the circulation of the venous blood, he considers the movements of respiration to hold the first rank.

"The chest represents a pump, which, by means of its dilatation, aspires the liquid contained in the veins: when its walls expand, a tendency to a vacuum is produced, and the blood contained in the venæ cavæ rushes towards the right auricle; on the contrary, during expiration, those vessels are compressed, and the fluid they contain, repelled from the chest."—Lect. 11.

"The vascular trunks that traverse the abdomen to reach the right side of the heart, are influenced by respiration, but it is through direct compression of their walls, and not by the absence of equilibrium between the internal pressure and that of the atmosphere. In other words, when the chest expands, the abdominal viscera press forcibly on the venous trunks, diminish their diameter, and so drive the column of liquid where it can find an issue. The blood passes partly towards the thorax, and partly towards the lower extremities, but in the latter direction it encounters the valves which arrest its progress; it is consequently forced to push on to the chest, and its entry into that cavity is further promoted by the dilatation of the right auricle. There are, therefore, at first, two currents in opposite directions, which, however, almost immediately coalesce into one. Expiration follows, and the abdominal viscera, compressed by the walls of the abdomen, press in turn on the vessels. The same displacement of the columns of blood, the same play of the valves, and impulsion of the blood towards the thorax, are again produced. The blood contained in the abdominal veins and venæ cavæ, is evidently urged on towards the central organ of the circulation, during both movements of respiration. These phenomena have been very accurately described by M. Poiseuille, who has made numerous experiments in elucidation of the theory of their mechanism."—Lect. 11.

Several of these experiments were repeated by M. Magendie, and the details given in the lectures before us. Numerous experiments are also given to show the influence of respiration upon the circulation of the blood through the veins.

The hæmodynamometer being applied to the jugular vein of a dog, the mercury was invariably raised during inspiration, and fell during expiration, and always in proportion to the extent to which each of these respiratory movements were effected.

The dilatation of the chest in the act of inspiration is not, however, the only cause of the movement of the venous blood, nor is it indispensable to

that movement taking place. M. Poiseuille opened both sides of the chest of a dog, and then practised artificial respiration with a bellows. In this experiment, aspiration of the blood is at an end; the scale of the instrument applied to the jugular vein, showed an unvaried pressure upon the mercury, nevertheless, the circulation continued. This experiment, slightly modified, was repeated by M. Magendie, and with the same result. Hence the blood in the veins is manifestly influenced by the mechanical agents which augment its force of impulsion in the arteries.

"If," the lecturer remarks, Lect. 9, "the blood, when once it reached the capillary systems, were kept in activity by a motor power belonging to that system alone, it is evident that its movements through the veins would be invariably uniform."

Inasmuch as the ascent of the venous blood towards the chest is effected uninterruptedly, there must, M. Magendie remarks, be some other cause of the movement in addition to expiration, and the action of the left ventricle; that cause, he conceives, is to be found in the elastic reaction of the arterial tunics, consequent on their dilatation by each wave of blood propelled forwards by the heart.

"As for the proper action of the capillary vessels, be assured," he adds," that such action exists not in nature, but solely in the imaginations of those physiologists who have described it."

"In order to estimate comparatively the force of progression of the arterial and venous columns of blood, it becomes necessary to cause the blood driven by the ventricle through a single artery to return to the heart by a single vein. This has been done by M. Poiseuille; after having isolated the femoral vein and artery, he suspended the circulation in the thigh, by means of a ligature tightly applied to the limb, and he then ascertained that the amount of pressure was the same in the artery and vein."

A somewhat similar experiment was performed by M. Magendie, and with the same result.

Various facts, as well as the experiments detailed in the present lectures, show that the pressure supported by the veins is much inferior to that sustained by the arteries. Now, as the principle of movement in both systems, resides in the heart, the question arises, why is it that the hydrodynamic phenomena of the circulation are identical in every part of the vascular system? This arises, according to M. Magendie, from the difference in the structure and arrangement of the two sets of vessels in which the blood circulates—the coats of the arteries being firm and elastic, and those of the veins flaccid, almost entirely devoid of elasticity—the arteries decreasing constantly in dimension, in proportion as they pass from the heart, while the diameter of the venous tubes augments as they approach that organ; hence in the arteries the current of the blood is most rapid at its origin, in the veins at its termination—the arterial tunics being constantly distended by the blood, while the coats of the veins are frequently collapsed—and the veins being provided with valves to prevent the reflux of the blood, while the arteries are destitute of such contrivance.

"The pressure is uniform throughout the arterial system, extremely various in the different parts of the venous. The physical properties of the circulating fluid differ in the two classes of vessels, as well as the character of its movements—in the one the current is rapid, in the other slow. But the two departments of the vascular apparatus differ most widely in respect of the number and capacity of their component tubes."

After showing how much the number and capacity of the venous branches exceed those of the arteries, the lecturer continues:—

"The arteries, from their position, structure, and the direction of the currents that traverse them, are independent of the majority of causes that slacken the movement of the blood in the veins."

"Although the pressure exercised by the liquid in the interior of the venous trunks is feeble, we have clearly seen that it does exist to a certain extent." "In attempting to explain this diminution in the influence of the heart, we must not forget to take into account the obstacle to the movement of the blood produced in the capillaries by the adhesion of a motionless stratum to their walls. But although this phenomenon has a decided influence on the velocity of the venous blood, still it is far from being of such consequence as might be supposed. The greater capacity of the venous tubes, as compared with the arterial, is the chief cause of the diminished progressive force of the current within them. If you represent by *one* the capacity of an artery, and by *ten* that of the veins which succeed to it, it is clear that each vein will only receive a tenth of the force that moves the blood in the artery. The impulse of the ventricle is divided, but not lost, in the venous system. This is so true, that when we cause the entire mass of blood conveyed to a part by an artery to return by a single vein, the pressure is found to be very closely equal in the two vessels."—Lect. 10.

The lecturer details several experiments, performed by him, to show the influence of variations of temperature upon the circulation of the blood. The blood in the living vessels, according to M. Magendie, is almost as directly influenced by the temperature of the atmosphere, as the mercury in the barometer.

"Every one is aware," he remarks, "that, during very hot weather, the face is more highly coloured than at other times, and the movements of the heart more rapid. A greater quantity of blood is constantly passing through the vessels, and the cutaneous and pulmonary exhalations are very sensibly increased in quantity; hence the craving we feel for aqueous drinks, in order to restore to the blood the water it is constantly losing. But it is on the capillary circulation more especially, that the temperature of the blood exercises a very manifest influence."—"The variation of heat acts not only on the blood in the capillary vessels, but dilates the membranous walls of the latter, enlarges their cavity, and modifies the hydrodynamic phenomena. Pulsations are felt where they did not exist before—several globules now pass abreast in the tubes, which before scarcely allowed of the passage of one; in a word, a new state of things discloses itself for the investigation of the physiologist."

"When the practitioner wishes to increase the activity of the circulation in an individual, and facilitate the passage of the blood through the whole vascular system, he orders a warm bath: its effects are soon felt through the entire frame. The respiration becomes accelerated, because as a greater quantity of blood arrives in the lungs within a given time, a greater quantity of oxygen is required; the tissues swell, and the external surface grows red. Again, if the object be to diminish the activity of, for example, the cerebral circulation, and to increase that of distant parts, you make use of pediluvia. The phenomena ensuing are precisely the same as in the preceding case, except that they are simply local. Instead of acting on the entire vascular system, you limit the action of the elevated temperature to a few of its tubes. This, too, is an exclusively physical result. Let us take an example of the opposite kind: An individual puts his hands and feet in snow—the fingers and toes immediately become white, in consequence of the reflux of blood to the central parts of the limbs. The capillaries of the periphery of the body, when submitted to the action of sudden cold, become unfit for carrying on the circulation. Part of the fluid they contain passes into the veins, and, as they no longer admit that which the arteries carry to them, they are really for a moment empty."—Lect. 5.

This M. Poiseuille has proved by direct experiment:—

"Cold baths," observes the lecturer, "are recommended in cases where the indication is to soothe general excitement, characterised by excessive activity of the circulation. When the forehead burns, and the temporal arteries beat violently, we apply ice, or some frigorific fluid, to the part. When too much blood flows to the brain, we have recourse to cold affusion."—"The treatment of fractured limbs, by constant irrigation with cold water, furnishes another example of this mode of action. The prolonged continuance of a low temperature diminishes the vascular pressure, prevents blood from rushing in the natural quantity towards the seat of the lesion; in a word, prevents the phenomena called inflammatory from taking place. When we plunge into cold water, during very warm weather, a peculiar sort of constriction is felt at the thorax. This again is a purely physical phenomenon. Less blood traverses the capillaries, consequently it accumulates in greater quantities in the larger trunks—these distended as they are, press on the neighbouring organs; hence the uncomfortable sensation of which the patient is conscious. It disappears when the equilibrium of temperature is restored throughout the sanguineous system; and so the sudden immersion of the whole body renders its effects much less sensible."—Lect. 5.

To ascertain the variations in the pressure the blood exercises on the vessels according as the temperature of the tissues is high or low, M. Magendie instituted experiments in which the hæmodynamometer, substituting a solution of subcarbonate of soda for the mercury, was applied to the vein of the lower extremity of a dog, the rest of the limb being immersed at first in a frigorific mixture, and subsequently in compresses saturated with hot water; from which it was found that the movement of the blood was evidently rendered slower by the cold, and quickened by the rise of temperature.

To determine with accuracy the effects of directly cooling the blood, M. Magendie injected a quantity of cold water into the veins of a middle sized dog, and applying the hæmodynamometer to the carotid artery—the blood, after the injection, was found to be reduced 7 or 8 degrees below its normal standard—yet, notwithstanding this and the presumed debilitating action of the water, the vascular pressure as indicated by the instrument was rather increased than diminished.—Lect. 5.

A few remarks are offered, Lect. 12th, on the reflux movement of the blood in the vessels, or its occasional flow in an artery directly opposite to the normal direction. According to the lecturer, two mechanical agencies appear to concur principally in the production of this reflux of the blood—the elastic retraction of the arterial coats at the moment the left ventricle expands, and anastomotic communications. When an artery is cut across, both ends retract on themselves, and consequently the blood rushes towards the points where there is least resistance. It will, therefore, chiefly direct itself towards the divided extremity.

"But the flow of blood will not stop the moment the coats of the vessel retract; the anastomotic branches, opening into its interior, keep a constant current in movement within it. The blood travels freely, in the contrary direction to that of its natural course, towards the solution of continuity, more especially where several trunks open into each other, as at the base of the skull. Surgeons who have recommended the ligature of both ends of a divided artery, have given us a wise precept; they have not, however, described the physiological foundation of it."

M. Magendie measured the force with which the blood tends to obey the retrograde movement with the hæmodynamometer. The instrument

was applied to the primitive carotid of a dog, a ligature having been previously placed around it, and it was found that, in consequence of the anastomotic communications which unite this vessel with the opposite carotid and the vertebral arteries, about the same amount of pressure was indicated in its superior and inferior ends—that is, in the end on the side of the ligature nearest the heart, where the pressure resulted from the action of the latter, as well as in the end on the opposite side of the ligature where the pressure can be produced only by a reflux movement of the blood.

In proceeding to consider the circulation through the capillaries, the lecturer notices, first, the extreme minuteness of these vessels, and the peculiar properties of the blood which enables it to traverse tubes of so small a calibre.

The diameter of the capillary vessels has been computed to be about the 1.150th or 1.200th of a millemèter.* Now it is with the greatest difficulty we can succeed in forcing *water* or any analogous fluid through glass tubes of only 1-10th of a millemètre in diameter; and it is almost impossible to drive a liquid through tubes of a smaller diameter, no matter what force be employed. We meet with the same resistance in injecting *water* into the mesenteric artery of a frog, with a view to force its passage into the continuous vein. The fluid employed is, in a great part, extravasated into the surrounding tissues, and but a small quantity reaches the desired point.

"My inquiries up to the present time," the lecturer remarks, "go to prove, that the passage of the blood, from the arterial to the venous capillaries, is effected by means of a nice adaptation of its physical properties to the physico-vital endowments of the vessels."—"That if a single one of the properties of that fluid be modified, its movement through the capillary system becomes impossible."

It is to the viscosity of the blood, mainly, that M. Magendie attributes its capacity to traverse the capillary vessels. The viscosity of the blood he pronounces "an indispensable condition for its free circulation." This property he illustrates by experiments on inorganic tubes. Thus, notwithstanding the impossibility of introducing water into a tube of extremely small diameter, whatever force we employ, yet, if any mucilaginous substance, as gum, gelatine or albumen be added to the water, it may be injected with ease. This fact is proved by some ingenious researches of M. Poiseuille. M. Magendie considers that the blood, circulating in our organs, may be justly assimilated to the fluid in the experiments just alluded to. If deprived of its viscosity, its further passage becomes quite as impossible as that of the non-mucilaginous water; it stops at the entry of the capillary system, is extravasated into the surrounding tissues, and causes the disorders ordinarily ascribed to irritation and inflammation.

To prove that the viscosity of the blood is the property which enables it to circulate through the minute capillaries, several experiments are detailed by the lecturer. Thus successive portions of blood were removed from an animal, and subsequently re-injected into its veins, it being first, however, deprived of its fibrine—symptoms of great gravity came on almost immediately, and the animal soon perished. Its blood had become so utterly unfit for circulation in the capillaries, that it was extravasated into

* A millemètre equals the 0.039370 of an inch.

the various tissues, but especially into the parenchyma of the lung, to which it gave the appearance of a huge clot.

Into the veins of another animal were injected 25 grammes* of subcarbonate of soda, which has the property of rendering the blood more fluid and preventing its coagulation. Death was instantaneous. The lungs were found distended with fluid blood, which gushed out when an incision was made into their substance; bloody effusion existed also in the pleura; the various abdominal organs were healthy.

After enumerating the twenty-five distinct substances which M. Lecanu describes as existing in the blood, the lecturer adds the following remarks:

"Now it is very possible that the number may be really still greater, but counting according to this analysis, there are only twenty-four in the specimen I show you. The absence of one of its normal constituents is not perceptible by any outward sign; the sample before you appears perfectly identical with the blood that circulates in the living animal. Yet, notwithstanding this apparent similarity, its properties are different, for if I re-introduce it by a vein, it will, at first, pass through the large vessels, but, on reaching the capillary system, its progress will be arrested, and the animal will soon perish of the disorders induced by the stoppage of the capillary circulation. Now nothing has been added to this blood; I have simply removed from it one of its elements—an element, too, that at the utmost forms no more than from 1.1000 to 2.1000ths of its volume. That element is fibrine, which, while in the vessel, is liquid; but, when removed from them, becomes solid; and hence it is to its *fibrine* the blood owes the extraordinary property it possesses of passing through the capillary system. But this is not the only important fact affecting the fibrine; indeed, were we to take this alone into account, we should fall into a very serious error. Let us suppose an animal whose blood contains fibrine, as well as all its other constituent parts, in the normal proportions. If I inject into the veins of such an animal any substance possessing the property of combining chemically, of forming salts, with the fibrine, such as fibrinate of soda, potassia, or ammonia, that fibrine will lose its coagulability. The change in the characters of the fibrine affects the blood generally; it ceases to be coagulable, and the usual consequence ensues."—Lect. 3.

"In order to support life, the blood must be coagulable; if it loses that property, existence is threatened, and ceases within a short time; and this is precisely what occurs in the greater number of destructive epidemics. They are specially connected with certain modified conditions of the blood, that cause it to stagnate in the pulmonary vessels. Such was the state of things in the epidemic—the '*grippe*'—by which we were lately visited.

"Now, even at the present stage of our acquaintance with the properties of the blood, we are enabled to take a different view from that ordinarily held concerning the nature and origin of *local* and *general* diseases. In the former case, the blood becomes obstructed in the pulmonary capillaries, and a local lesion of those organs—either apoplexy, hemorrhage, or hepatisation—follows. In red hepatisation, however, the blood does not cease altogether to be coagulable; in fact, the compact, hard, resisting masses, formed in the areolæ of the organ during the course of pneumonia produced by any external cause, are nothing more than clots of blood. But in the *false pneumonia* of the '*grippe*,' it is totally deprived of the property of solidifying, is effused into the parenchyma of the organs, and causes the blackish serous infiltration met with in the victims of that epidemic. But let us admit that the altered circulating fluid has succeeded in getting through the pulmonary vessels, it passes to other organs, and in some of them, as, for example, in the intestinal mucous membrane, encounters capillary vessels of still greater tenuity than those of the lungs. The mechanical obstruction here produces redness and ulceration of the follicles—the organs of

* The gramme equals 0.0648 grains.

digestion lose their power of assimilation, and the whole economy suffers from the same shock."—"In acute rheumatism, the painful parts become the seat of engorgement due to the stoppage and accumulation of the blood in its canals. The liquid stagnates, its temperature falls, and hence the sensation of cold felt by the patient, and which may, in some cases, be felt by a bystander on the application of the hand."

We have made the above copious extracts from the 3d lecture of M. Magendie, as well in consequence of their containing many important particulars in reference to the circulation of the blood, as an exposition, in his own expressions, of some of the lecturer's pathological views.

As further proof that a certain degree of viscosity, is an essential requisite for the healthy circulation of the blood, M. Magendie adduces the fact deduced from actual experiments; that if an animal be bled several times, and the blood drawn replaced with water, exhalation and effusion into the cavity of the pleura, and subsequently into the peritoneum will ensue, in consequence of the viscosity of the blood being reduced by the water introduced.

When the viscosity of the blood is artificially *increased* beyond its natural term, the circulation ceases entirely, in consequence of the affinity between the molecules of the blood being rendered too great; hence, the lecturer remarks, there must be diseases originating in excessive viscousness of the blood. In the experiments to exemplify this point, a viscid matter, as gum, for example, dissolved in water, and coloured was injected into the jugular vein of an animal. As long as this mucilage traversed the large venous trunks, no disturbance resulted, but so soon as it had arrived by the pulmonary artery, in the minute ramusculi of the lung, its degree of viscidity ceased to be in just proportion to the capacity of the tubes. The consequence was, that the circulation almost instantly stopped, and as the brain no longer received the necessary excitement of arterial blood, its functions ceased, and the animal quickly perished. On cutting, after death, the parenchyma of the lungs, perpendicnlar to the direction of its principal vessels, they were found invariably clogged up with the matter injected. But the lecturer remarks, let us suppose the substance to have passed with great difficulty through the pulmonary vessels; arriving at the capillaries of greater tenuity, it will, beyond question, be arrested in its course by this new obstacle; and its stagnation and subsequent effusion, will produce, according to the nature of the parts with which it is in contact, various disorders, more or less analogous to those already described.

"I mentioned," says M. Magendie, "gum as a substance that increases the viscidity of the blood. I may add that oil and starch, and all amylaceous matters, generally, possess the same property. Besides, similar modifications arise spontaneously in certain diseases. Thus we sometimes meet with blood so extremely viscid, that it has very nearly the same consistence as, to use the language of pathologists, currant jelly. I showed you several cases of this kind, both natural and artificial, and you saw that the most perfect analogy always existed between the phenomena produced by the unknown causes of disease, and by my experiments. In every case in which you find the blood clotted in this manner, you may rest satisfied, that the lungs have been the seat of some profound lesion. We have ascertained that the alkalies liquify the blood, and it is similarly demonstrated, that certain acids, sulphuric among others, increase its viscidity, by combining with, and solidifying its fibrine. Nay more, I have proved, as in every other case by experiment, that prolonged inanition, produces the same result; the blood loses its aqueous principle, and tends to solidification."—Lect. 4.

M. Magendie has shown that, to enable the blood to traverse the capillaries, a harmony must exist between its globules and the calibre of the latter tubes. Thus, when in his experiments, he introduced into the blood-vessels of an animal, the globules of the feculæ of corn or potatoes, which are perfectly innoctious in their properties, but vary from one-twentieth to one-tenth of a millemètre in diameter, an obstruction of the capillary vessels was produced, followed by dyspnœa, cough, prostration of strength, and similar lesions were exhibited after death, as result from excessive viscosity of the blood. When, however, globules of a similar kind, but of infinitely smaller size were introduced, the circulation experienced no interruption. Thus, some of the fecula of the *mirabilis jalapa*, the granules of which are only one-three hundredths of a millemètre in diameter, were injected into the veins of a dog, no notable disturbance followed. A larger quantity of the liquid containing the fecula being subsequently introduced, the animal was seized with dyspnœa, and died in a few hours, and the lungs exhibited the same appearances as in animals destroyed by the injection of oil or starch. In this case, the fecula had lost nearly all its water by evaporation, and when injected was very viscid—"it was, therefore," M. Magendie remarks, "its viscidity, and not the size of its globules which caused the death of the animal.

In another experiment, M. Magendie injected a drachm of varnish, holding some sifted porphyrised animal charcoal in suspension, into the femoral artery of a dog—the consequence was, that mechanical obstruction of the capillaries of the limb took place, the circulation was suspended, and on the third day, the leg presented all the characters of confirmed gangrene.

It appears to M. Magendie to be improbable that corpuscula of very large size, in comparison with the diameter of the capillaries, can directly enter the circulation. He conceives, however, that some chemical agent or other may be absorbed, and entering the circulation, modify the globules, or some one of the elements of the blood.

"A chemical process commences, and granulations are deposited in the interior of the minute vessels, block it up, and arrest the motion of the column of blood. It is in this manner, that a concentrated acid injected into the stomach, causes death, by coagulating the albumen of the blood, and obstructing the flow of that fluid mechanically."—Lect. 20.

It is to mechanical obstruction in the blood-vessels, either from the particles of matter suspended in the blood being too large for the diameter of the tubes, from too great a viscosity of the blood, or from a tumour developed among the tissues pressing on the vessels, and other analogous causes, by which the movement of the blood is arrested, that M. Magendie would seem to attribute the production of the majority of cases of spontaneous gangrene. The *dry* and *humid* gangrene of nosologists, differ, according to his views, solely in the quantity of fluid present in the affected part.

"It is probable, that the first species originates more particularly in some obstruction to the arterial circulation, whereby the passage of the blood through the capillaries is prevented; while the second would appear to be principally brought about by venous obstruction and consequent non-return of blood to the heart."—Lect. 21.

Two hundred grammes of quicksilver, the particles of which are too large to force their way in the living subject, through the ultimate ramifications of the blood-vessels, were injected into the right primitive carotid

of a dog, and the animal was immediately affected with all the symptoms characteristic of an *ictus sanguinis*, and died in a few minutes. On opening the skull, minute drops of the metal escaped from the lips of the incision, showing the facility of anastomotic communication between the two external carotids; on denuding the brain, the pia mater presented the appearance of a silvery pellicle, spread over the nervous substance. The brain and cerebellum being invested on all sides by a network formed of the minute blood-vessels, into which the injected fluid had penetrated. The column of quicksilver seemed to terminate abruptly at some points, where no doubt the globules of the metal were too large to penetrate any further. Such was the uniformity of distribution of the injected fluid, that it was impossible, by the simple inspection of the vessels of the pia mater, to determine in which of the two carotids it had been introduced.—Lect. 20.

M. Magendie remarks, (lecture 5,) that a phosphuretted fatty matter has been discovered in the blood, analogous to that of the nervous matter, and like it causing instant death, when re-introduced into the blood by injection. M. Pinel Grandchamp states, that the injection of half an ounce of this substance, into the veins of a furious buffalo, proved almost instantaneously fatal. "Now death, in this instance," adds the lecturer, "is a purely mechanical result; this I demonstrated clearly last year. The nervous pulp acts solely by obstructing the minute capillary tubes; it is otherwise inoffensive.

We cannot spare sufficient space to notice all the interesting facts, presented in these lectures, and derived chiefly from the microscopical observations of M. Poiseuille, in relation to the phenomena which the blood exhibits during its passage through the capillary vessels.

The following experiment of M. Poiseuille, proves in the clearest manner that the movement of the blood through the capillary system depends on the impulsion of the heart and the elastic retraction of the coats of the vessels.

"The femoral vein, artery and nerve of a frog are accurately separated to the extent of two centimetres, (nearly four-fifths of an inch,) at the least, from the surrounding tissues, and a ligature then passed round the thigh, excluding the vessels and nerve; a loose ligature, ready to be tightened at will, is thrown round the vein. A thread is next fixed to the extremity of each digit of the same limb, to facilitate the examination of the circulation in the interdigital spaces, without modifying it by pricking the tissues. The frog being pinned down to a flat piece of cork, and the web laid under the object-glass of the microscope, the ligature embracing the bone and muscles of the thigh is forcibly tightened. The experimenter is then certain, that the circulation in the lower part of the limb is carried on by the dissected vessels alone. The circulation in the arteries, veins, and capillaries, goes forward in the same manner as before the performance of the operation described; jerking movements sometimes take place. The globules move more rapidly in the arteries than in the veins; and in the capillaries, their velocity is less than in the other two orders of vessels; in some, however, it is greater than in others, for reasons to which we need not at present direct our attention. The observer now watches with especial care, an artery and vein of the interdigital space submitted to investigation; he then interrupts the course of the blood in the femoral vein; the moment he does so, the progression of the globules in the vessels of the digital interspace becomes jerking, and this jerking mode of progression lasts a few seconds only, being followed by an oscillatory movement. The span of these oscillations at first equals the length of five globules, and soon decreases to that of two; the rhythm is identically the same in the artery and capillaries of the interdigital space, and they continue to the number of forty-six in a minute, so long as the compression of the vein is kept up. While the femoral vein still undergoes compression,

the experiment is varied by interrupting the course of the blood in the artery also; the oscillatory motion ceases at the same instant. The globules become quiescent in the artery, the capillaries, and veins of the extremity. If the femoral artery be then freed from constriction, oscillations of equal length in the three orders of vessels recommence. These experiments concluded, the heart of the animal is laid bare, and the number of the contractions of the ventricles counted; these are found to be one hundred and eighty-six in four minutes, or forty-six in a minute.

"*Remarks.*—The oscillations of the globules are produced on the one hand, by the heart, which impels the blood into the arterial system, into the capillaries and the veins; on the other by the retraction of the arteries and veins that follows their dilatation by the wave of blood driven forwards by the left ventricle."—Lect. 13.

In his 7th lecture, M. Magendie notices the influence of moral impressions, and all strong sensations, whether painful or pleasurable on the circulation, by altering the rhythm and energy of the heart's contractions, and the effects of muscular action in favouring the passage of the blood through the veins.

In proceeding to a consideration of *the blood itself*, the lecturer points out (lecture 7,) a fundamental fact, necessary to be kept constantly in view, the difference, namely, between the blood in the living animal, and that extracted from the body.

"When," he remarks, "we examine such vessels of an animal under the microscope as are sufficiently transparent for the purpose, we distinctly perceive an infinite number of globules, borne along by a rapid movement, rolling and slipping over each otber; and we see, besides, between the mass in motion, and the walls of the vessel, a space almost destitute of globules, and filled with a colourless transparent fluid. This fluid is the *liquor sanguinis*, which holds the globules in suspension during life."

"The *liquor sanguinis* is, no doubt, in reality, serum; but serum which holds in suspension, or in solution, the coagulable matter, or fibrine of the blood."

If you allow some of the blood to flow from the living vessels into a vase—

"A clot will form, and the globules disappear, while within the vascular tubes, they move in the midst of a viscid fluid." "In a vase solidification takes place; one of the elements of the liquid, the fibrine, becomes organized, and imprisons the globules in its cellular structure. In the living subject the serum contains the globules and fibrine in suspension, removed from the body that liquid bathes, a clot composed of fibrine and globules."

"Still of the two parts, the serum and the clot into which the blood separates, when out of its natural tubes, examine the latter, and you will find that the liquid dissolves the globules. The fibrine will alone remain, and you will be astonished at its minute quantity, compared with the dimensions of the clot, and the enormous number of globules it contained."

It appears to M. Magendie, that the condition of the fibrine in the serum, is most probably that of suspension. He believes that the fibrine, instead of being a kind of precipitate in the blood, exists in that fluid in the form of *minute vascular arborisation*, forming, in a certain sort, the first degree of organization."—Lect. 5.

"The *fibrine*," the lecturer remarks, "is alone, at once the cause and the agent of the solidification of the blood."

"If you examine," he remarks, "one of these masses of parenchymatous fibrine, (a portion of fibrine deprived of red globules,) under the microscope, you will detect a regular conformation in it resembling the forms assumed by orga-

nized matter, such as ramifications and areolæ, intermingling and anastomosing in an infinity of ways. The clot then, the *insula* of the ancients, must not be looked on as an inert mass, but as a fibrinous arborescent matter, forming the basis of a finely and delicately organized parenchyma, and differing essentially from the albumen, the solidification of which is the simple result of a chemical or physical agency. But the functions of the fibrine do not stop here. It is to be found again, with the same characters, in the coagulum which obliterates divided arteries or veins: it is to be traced in the formation of adhesions, of false membranes, and of cicatrices; and it is to be seen deposited in layers at the surface of solidified wounds. Under all these conditions it is organized; its arborisations are converted into pseudo-membranes, and these false membranes become canaliculated, forming vessels permeable in their turn, by the liquid that produced them, and of which they originally helped to constitute the substance."—Lect. 7.

To prove that the fibrine is the agent by which the adhesion of cut surfaces, and the obliteration of ligatured vessels are effected, M. Magendie made a longitudinal incision through the skin, and some depth of muscle in a dog, from whose blood the greater part of the fibrine had been removed, the lips of the wound were accurately united by the twisted suture, and the animal left to himself; after a few days he died, when, on examination, the lips of the wound were discovered to be dry, discolored and scarcely at all swollen, but presenting no real adhesion.

In the same animal, a ligature had been applied to the right carotid; on slitting up the vessel and examining its interior, no trace of coagulum existed; the ligature had nearly divided the coats, and had the animal survived a few days longer, it is evident that secondary hemorrhage must have occurred.—Lect. 7.

The solidification of the fibrine in blood drawn from the body, M. Magendie considers to be an action occupying a middle place, if he may so express himself, between *vitality* and *inorganism.* This he infers from its property of spontaneous coagulation, and forming always in its solid state a real texture or parenchyma, constituted of filaments crossing each other in a variety of directions, and adhering together so as to form cells, irregular in shape and size, resembling those discovered by the microscope in our most delicate tissues. Lect. 11.

This will be rendered more evident by receiving the blood into a vessel containing sugar and water, in which case, the fibrine will be obtained separated from the globules. One of the most remarkable circumstances, the lecturer remarks, connected with the formation of these networks of fibrine is, that whatever be the quantity of water that is added to the blood, provided the latter contain the least share of fibrine, that fibrine will detach itself from the rest of the fluid in the shape of long filaments, which contract adhesions with the inner surface of the vessel, interlace, become agglutinated together, and so form an undulating network, modelled to the shape of, and filling the whole interior of the vessel. In a mixture of $154\frac{1}{2}$ grains of blood with six times that weight of water, the fibrinous network was perfectly distinct, and after this was removed, a second one of still more cloudy appearance than the first was perceived. Lect. 12.

M. Magendie notices, in the same lecture, the strong resemblance which exists between the species of membrane formed by the fibrine, and rendered evident by receiving the blood in vessels containing a portion of sugar and water, and those lining the uterus during the early period after fecundation. At that period, the uterus undergoes a particular modification: and the lec-

turer is inclined to believe that the distension its tissues experience, dilates the orifices of the vessels terminating in it; the blood is distributed to it in greater quantity than usual, its fibrine transudes on the fœtal surface of the organ, and forms the membrane placed between it and the ovum.

The buffy appearance of the surface of the clot which is occasionally met with, and which was formerly considered as an invariable indication of the existence of inflammation and the necessity of blood-letting, M. Magendie has shown to be nothing more than a portion of fibrine, which, as it is lighter than the colouring matter of the blood, whenever the coagulation of the clot is sufficiently slow to allow it, rises to the top, and forms on the upper surface of the liquid. It is often absent in cases of evidently intense inflammation, while it is as often present where the existence of inflammation or other disease cannot be suspected.

"The modification in the coagulating process, which produces the buffy coat," observes the lecturer, "depends on a variety of circumstances. Thus, although inflammation evidently exist, if the opening made in the vein be narrow, or if its parallelism with the wound of the integuments be imperfect, and the blood flows slowly; or if the receiving vessel does not present a wide, and, according to others, a narrow, surface to the air, the *buff* refuses to show itself."—Lect. 7.

If four parts of sugared water, and one of blood be well shaken together, and then allowed to settle, after a certain lapse of time, the white clot will be perceived at the upper part, in consequence of the sugared water facilitating the precipitation of the globules.—Lect. 19.

This buffy coat which is only an occasional occurrence in human blood, is almost constantly present in that of the horse, and there ordinarily forms two-thirds of the total mass of the clot.

"In cases," M. Magendie remarks, "where a buffy clot is about to form, some yellowish serum is observed to accumulate on the surface of the blood; this is especially remarkable in the instance of the horse. Now, if this serum be removed, it will coagulate like the fibrine itself, and the same process will go on, until all the fibrine of the blood has coagulated. I have remarked this fact, which struck me not a little, the first, as I had fancied, but it appears that Dr. John Davy noticed it before me, in his researches on the coagulation of the blood."—Lect. 20.

According to the lecturer, so long as the clot, which is constituted chiefly of coagulated fibrine, holding entangled in its meshes, the red globules, forms about the fourth of the entire mass, there is a species of equilibrium of composition, which coincides with the state of health.—Lect. 9.

When removed from the body, the blood presents itself under two very distinct conditions. In some cases it forms a compact mass, its superior surface being of a bright red colour, the lower portion blackish; in other instances, it separates into two perfectly distinct parts—the clot and serum. In certain cases of disease, the blood either coagulates very imperfectly or remains entirely fluid.

The causes that deprive the fibrine of the capability of clotting reside, according to M. Magendie, in the air, in miasmata, in our food and drink, and, in short, in every agent surrounding us that penetrates into the economy, no matter by what route. In cases of asphyxia by lightning and carbonic acid, the fibrine also loses its power of coagulating. The lecturer found, also, by experiment that the section of the eighth pair of nerves likewise destroys the coagulability of the blood. Whether by a mediate or immediate action, he is unable to decide. Compression on the brain was

artificially produced, by injecting through a small opening made in the skull of an animal, beneath the pia-mater, a sufficiency of liquid, to determine the characteristic phenomena of compression of the brain, and then blood was drawn from an artery. The clot formed by this blood was tremulous, undulating, and so far from being of the healthy firmness, the simple weight of a small glass rod was sufficient to break it in two.—Lect. 16.

The fact that gives its chief importance to the study of the property of coagulation in the blood, is that, as M. Magendie has demonstrated, the loss of this property, no matter under what circumstances it occurs, is followed invariably by death.

The coagulation of the blood may be prevented by either diminishing its amount of fibrine or destroying in the latter its property of spontaneous solidification. The amount of fibrine in the blood may be so far reduced by repeated bleedings or spontaneous discharges of blood as to be no longer capable of coagulation. A female was admitted into the wards of M. Magendie at the Hôtel Dieu, with most *violent uterine hemorrhage*, which had existed for two days at the time of her admission. This was the consequence of an artificial miscarriage, induced by the use of powerful drugs. It was not her first attempt in this way; she had already succeeded twice or thrice in producing abortion. The general pallor of the patient was very remarkable, as well as the state of prostration and stupor under which she laboured.

"Her blood," remarks M. Magendie, "trickled away in diffluent clots of a peculiar odour; it was this, indeed, that turned my thoughts to the probability of a premature delivery having taken place; this, however, the patient employed all her remaining strength in pertinaciously denying. I had two ounces of blood taken from her, to enable me to prognosticate the probable issue of the affection. Here is the blood: the disproportion of its elements is frightful; there is only 15 per cent. of coagulum. I affirm, that with such a quantity of serum in the blood, the capillary circulation cannot be regularly accomplished. I have before me a new proof of the fact, in the lung of an animal, submitted to successive bleedings. At the eighth, the blood was so profoundly altered in its qualities, that it was impossible to continue the experiment, for the following reason:—Blood can only be removed from the body through an artery or a vein. In the case of the arteries a clot forms, after the operation is finished, which mechanically blocks up the cavity of the vessel; but if the blood have lost the property of clotting, of course, no coagulum is produced. In the case of the veins, the edges of the wound become glued together, and unite in such a manner as to leave the cavity of the vessel free; but in the condition of the blood referred to, no adhesion takes place. You may tie the artery, and heap ligature on ligature, but in vain; they cut through the vascular tunics, and the hemorrhage reappears in a more threatening manner than before. As the very simple cause of these deplorable occurrences was not formerly understood, they were quasi explained by a term without the least real meaning: they were ascribed to the *hemorrhagic diathesis*." "You are aware what difficulty is encountered in the attempt to stop the flow of blood in some individuals, after the application of leeches, or the trifling operation of cupping." "But to return to the animal: he died of hemorrhage; and, according to my theory, we should find an affection of the lung, engorgement, œdema, or possibly, even true pneumonia; and, as I had supposed would be the case, we discover, on cutting into the organ, that serosity oozes from its substance. This is nothing more than the serum of the blood, extravasated into the vascular areolæ, because the blood had lost its just degree of coagulability. What can have deprived it of that property, unless it be the bleedings the animal underwent? Hence, that operation was the real

cause of the animal's death, as it was so frequently repeated as to render the blood almost, or completely non-coagulable."

"There is something very remarkable, in a pathological point of view, in the case of the woman with uterine hemorrhage, and whose blood gave but 15 per cent. of coagulum. At the end of forty-eight hours, during which every drug supposed to possess antihemorrhagic virtues was employed, among the rest secale cornutum, *peritonitis* supervened."—"Now, can you fancy that the attack of peritonitis was the result of excitation, or irritation, suffered by the patient? She was, on the contrary, perfectly anemic, and in the most marked state of weakness—and peritonitis is so acute a disease, that it carried her off in less than four and twenty hours. Is no relation to be recognised between the liquidity and slight coagulability of the blood, and the affection of the peritoneum? But this is not all; if we turn from the abdomen to the lung, there, too, we find a state of engorgement, in other words, serosity effused; in short lesions perfectly analogous to those detected in the lung of the animal submitted to repeated blood letting. I may, therefore, legitimately conjecture, that these diseases are to be referred to particular conditions of the blood also. I also discover a substance solidified in the form of very thin lamellæ,—may I not suppose that this is the fibrine of the blood escaped from its vessels, and become organized? This idea has, indeed, been already broached, and nothing has hitherto shown it to be fallacious. The relation that may possibly subsist between the composition of the blood and the development of peritonitis, especially in cases where it follows hemorrhage from abortion, and forms a most serious complication of puerperal fever, seems to me a point of the deepest importance, and worthy of our most anxious attention."—Lect. 9.

In dogs bled to a considerable extent, the fibrine being immediately after the operation separated with care, and the rest of the fluid then injected into the veins; from the period of the operation the animals lie on their side, as if their limbs had lost even the share of strength necessary to support their body; the respiration at once becomes plaintive; the movements of the animals are few and difficult, and they appear to have lost the power of hearing. In addition to all this, sanguinolent motions are passed, resembling very closely the alvine dejections in dysentery, caused probably by the escape of the blood through the coats of the vessels on the surface of the mucous membrane; a sort of eruption generally occurs, resembling, in no slight degree, the petechiæ of fever, and, like them, apparently produced by exhalations of blood into the substance of the skin—the animals become usually quickly affected with a species of purulent ophthalmia.—The conjunctiva assumes a fungous, pulpy appearance, becomes covered with a greenish film, and the cornea strewed with round superficial ulcerations, which augment in size and finally perforate the membrane. The blood, deprived of its fibrine, ceases to follow the course of the vessels, but oozes through their walls, just as if these were perforated with holes like a sieve; morbid exhalations consequently take place into the substance of the tissues, between the tunics of the intestines, into the parenchyma of the lungs, on the surface of the mucous membranes, and even into the serous cavities. The proposition, therefore, of Dieffenbach to employ defibrinized blood, in cases in which transfusion is determined upon, is altogether inadmissible.

"If, instead of removing at once all the fibrine from the blood of an animal, we remove it by small portions, we find that these repeated subtractions induce local lesions, of which there is no mistaking the origin." Lect. 13.—"You may even remove a considerable quantity of fibrine without producing any evil consequence, provided you are cautious about abstracting a small portion only at a time, and allowing some time to elapse between each operation."—Lect. 16.

When the fibrine was removed by small and repeated subtractions, M. Magendie found that the amount contained in the blood, instead of diminishing, actually augmented in *volume*. He caused three bleedings to be practised at equal intervals, on a large dog, of twelve, ten and eight ounces. On each occasion the blood was beaten up, filtered through a linen cloth, and then immediately reinjected into the veins of the animal. The fibrine of the first bleeding was whitish, supple and elastic, in fact normal in its character: that of the second was softer, more spongy, and more voluminous, though the quantity furnishing it was less; these characters were still more distinctly marked in the fibrine of the third bleeding; it was more voluminous than in the previous instance, its fracture instead of being clean, showed irregular filaments, proving that the force of cohesion, by which it resisted traction, is unequally shared by its fibres. When the two are weighed comparatively, it is found that the healthy fibrine, though inferior in point of mass, weighs considerably more than the other. Among the chemical characters of the two substances there is one which renders it impossible to confound the fibrine of secondary formation with the normal species,—it is that if the former be submitted to a temperature of 60° centigrade in a sand bath, it liquifies just like so much albumen. To this substance M. Magendie has given the name of *pseudo-fibrine*. The animal on which this experiment was made, was fed entirely on feculæ which contain no fibrine. Hence it is possible, by gradually defibrinizing the blood, to alter its normal properties without, of necessity, depriving it of the power of coagulating."—Lect. 13.

This pseudo-fibrine does not prevent the blood from becoming extravasated into the substance of the tissues.—Lect. 19.

One of the defibrinized animals, which a few days previously laboured under all the symptoms of purulent ophthalmia, with commencing opacity of the cornea—the condition of the different organic functions being indicative of a typhoid state of the system—was put on a nourishing diet in sufficient quantity, and he was found to have undergone a complete metamorphosis. He was previously in a complete state of prostration; he was now become gay and full of life. His eyes were quite cured, the cornea had recovered its natural polish and transparency, except in one or two spots, indicating the site of the ulceration that had commenced to form.—Lect. 20.

Lesions of exactly the same description as those caused by the abstraction of the fibrine are produced, according to the experiments of the lecturer, by the injection into the veins of certain substances, as the sub-carbonate of soda, which destroy the coagulability of the blood. The animal is immediately affected with dyspnœa, frequent pulse, bloody stools, exhalation of blood from the pituitary membrane, and complete debility, terminating shortly in death. On dissecting the body, the blood is found to be completely fluid; the lungs scarcely collapse on the chest being opened, their surface is of a reddish-brown, instead of being rosy; their tissue is firmer and contains less air than in the natural state. The cavities of the heart are contracted and contain no coagula, but some grumous masses. The lining membrane of the ventricles and arteries is deeply coloured with imbibed blood. In the cavities of the pleuræ are effusions of sanguinolent fluid, resembling in anatomical characters the affections termed hemorrhagic pleurisy. The condition of the peritoneum is the same; in its cavity is found an effusion of the same kind which reddens the surface of the abdominal viscera. The kidney and liver are engorged

with blood; the spleen has lost its normal structure, being converted into a compact, homogeneous mass, resembling a sponge that has been long macerated in water. The serous coat of the intestines is raised in different points by small ecchymoses of variable size, sometimes solitary and sometimes communicating with each other, appearing in some spots to penetrate into the cavity of the peritoneum, rather by imbibition than rupture. The mucous coat presents reddish cylinders, interlacing in every variety of mode, caused by the dilated and obstructed vessels. Large follicular patches are spread over the whole surface of the bowels, and in every direction blood is exhaled through the coats of the vessels. Even the corpora cavernosa penis are swollen with a notable quantity of fluid blood.—Lect. 18.

In general, however, according to M. Magendie, the blood when liquefied by the sub-carbonate of soda, affects especially the lungs, leaving the various abdominal organs intact.—Lect. 13.

A drachm of œnanthic ether mixed with an equal quantity of distilled water was injected into the veins of a dog. The animal immediately fell down with every symptom of drunkenness. He remained motionless, became comatose, his respiration grew loud and stertorous, and he died in forty-five minutes. On incising, the next day, the muscles of the trunk, a quantity of fluid blood issued from the vessels—it seemed as if no clots had been formed in their interior. The lungs presented most of the signs of engorgement, among others, augmented weight and density; but there was no true hepatization—a new proof, according to M. Magendie, that this latter condition is connected with the coagulating property the blood possesses while living. The heart and great vessels were filled with blood, more viscid than that of animals killed by sub-carbonate of soda, though of the same appearance to the eye. The internal surface of the vessels was studded with brownish patches, produced by the imbibition of some of the elements and the colouring matter of the blood—no fibrinous clots were to be found. The liver and spleen were evidently enlarged; when cut, a quantity of black viscous blood flowed in greater abundance than usual. The same was the case with the kidneys and other parenchymatous viscera. The external surface of the stomach and intestines was streaked with reddish lines, radiating in various directions, and forming a net-work by their interlacement—these were the capillaries distended with fluid blood. There were no extensive patches of extravasation, for death was so rapid that the liquids had no time to penetrate the walls of the intestines by imbibition.

"As the sudden introduction of a little œnanthic ether into the veins of an animal," observes the lecturer, "destroys the coagulability of its blood, it is by no means impossible but that the prolonged abuse of wine may, in the end, entail similar modifications in the physical properties of that fluid."--Lect. 4.

Some blood, immediately on its removal from an artery was mixed with putrid water, and not the least trace of coagulation occurred;—another portion of blood was mixed with pure water, and the whole became speedily solid. Hence the prevention of coagulation in the blood mixed with the putrid water was evidently to be ascribed to the latter—probably to the hydro-sulphate of ammonia formed in the process of putrefaction. A few drops of putrid water were then injected into the veins of an animal, and death almost immediately occurred. On cutting through the integuments, liquid blood flowed from the incision; the muscles presented a remarkable punctated red colouration, such as is often met with in the brain, and is

caused by a vast number of small petechiæ formed of extravasated blood; the lung was scarcely at all diseased; the mucous coat of the intestine was raised by a deposition of blood in the subjacent cellular tissue; on its surface were large patches of albumen and mucus, "the whole forming a very excellent case of gastro-enteritis for the disciples of a certain school."—Lect. 13. This experiment, according to M. Magendie, explains in some measure the pathology of disease resulting from the introduction into the system of putrid miasmata.—Lect. 13—14.

While the sub-carbonate of soda injected into the veins acts specially on the lungs, these organs are scarcely affected by the injection of putrid water, which exercises all its deleterious influence on the intestinal canal. Lect. 14.

In another instance of death from the injection of putrid water into the veins, the lungs presented no apparent lesion; the heart was flabby and collapsed; the blood in the right cavities liquid, black, and viscous; the left ventricle perfectly empty; the intestines were black coloured, *inflamed*, according to the current phrase; transudation had taken place on their internal surface, partly constituted of the colouring matter of the blood; which appearance, according to the lecturer, fully accounted for the bloody stools of the dysenteric flux, under which the animal laboured.—Lect. 15.

After noticing the usual opinion of the non-coagulability of the blood in scurvy, M. Magendie remarks (Lect. 16.)

"A short time since M. James inserted an essay in the '*Gazette Médicale*' on this subject, wherein he developed, with considerable talent, the ideas I broached respecting it last year, and supported the opinion that the alkaline character of the blood might be the cause of the non-coagulability of that fluid, as well as the symptoms of scurvy. But though this essay is a meritorious production, it furnishes decisive proof how very necessary it is to draw general conclusions with deliberate caution, for the inference drawn in it is quite fallacious. Here is the blood of an individual affected with scurvy sent me by M. Leuret, physician to Bicêtre. The gums of the patient are, I am informed, considerably swollen, his teeth are quite loose, the surface is covered with large petechiæ, and some parts of the body are œdematous: nevertheless, the blood presents a firm and consistent clot; the colouring matter alone is visibly altered in constitution, being of a brownish red colour."

"Among the medicated drinks employed in fevers," remarks the lecturer, "sulphuric acid is one of those most frequently prescribed. I was consequently desirous of ascertaining the nature of its direct action on the blood. With this view I mixed a *few drops* of sulphuric acid with a larger quantity of water, proportionally, than that entering into the composition of the 'sulphuric lemonade' of our hospitals, and injected a few centilitres of the liquid into the jugular vein of a dog. Death followed almost instantaneously, and the blood was found to be non-coagulable."

By experiments with sulphuric acid mixed with blood out of the body, M. Magendie found that one drop of the acid was sufficient to deprive five centilitres of blood of its power of coagulating; subsequently he added fifteen drops of the acid to thirty centilitres of water, and poured four drops of this solution into twenty centilitres more of water, and found that even this liquified the blood, and altered the constitution of the globules, although it did not coagulate the albumen.—Lect. 17.

The substances which M. Magendie found to prevent the coagulation of the blood are the sulphuric, hydrochloric, nitric, tartaric, oxalic, citric, lactic, acetic, tannic, hydrocyanic, boracic, arsenious acids; soda, potassa, lime, ammonia, with their carbonates; nitrates of potassa, lime, and strych-

nia, sulphate of morphia, narcotine; the chloride of gold; ioduret of iron; putrid water, decoction of digitalis.—Lect. 17.

What, according to the lecturer, gives its chief importance to the study of the coagulation of the blood is, that, as has been shown to demonstration, the loss of this property by the blood, no matter under what circumstances it occurs, is followed by death. His investigations, also, leave, he conceives, no doubt that the substances which liquefy the blood out of the body, act in the same manner on that fluid when introduced into the living tubes of our organs.—Lect. 13.

The following substances M. Magendie has found to promote the coagulation of the blood:—water, sugared water, the hydroclorates of soda, potassa and ammonia; the serum of ascites, boracic acid, borax, nitrate of silver and of bismuth, hydrosulphate of potassa and ammonia, the Seltzer, Vichy and Seidlitz waters, ioduret of potassium, tartar emetic, sulphate of magnesia, alcohol, cyanuret of gold and of mercury, the acetate and hydrochlorate of morphia, mannite.—Lect. 17.

Ether mixed with pure water, dissolves the globules, but does not prevent the formation of a coagulum. *Claret*, mingled with a small proportion of blood did not coagulate it, but allowed of the transudation of a small quantity of serum. *Claret and water* caused an agglomeration of the albumen at the upper, while a small clot formed at the lower part of the vessel. *Beer and cider* precipitated the albumen, and prevented the formation of a coagulum.

The various *neutral tartrates* added to the blood do not appear to impede coagulation; on the contrary, the larger the proportion in which they enter into the mixture, the more solid the resulting coagulum.

Soluble cream of tartar,—tartrate of potass rendered soluble by the addition of a certain quantity of borax,—mixed with blood gave the whole a deep olive colour and threw down a slight precipitate of albumen. A drachm dissolved in twenty centilitres of water, introduced into the veins of an animal, caused instant death. On dissection the muscles were found completely discoloured,—the lung was partly engorged, partly hepatized,—in the first instance the blood is imbibed into the tissue of the organ,—in the latter, it is in addition solidified. The cause of death was, in this instance, the sudden coagulation of the blood; the promptitude with which the fatal result occurred explains, according to the lecturer, the healthy condition of the intestines.—Lect. 17.

The reason why this and other substances which cause such fatal effects when introduced into the veins, may be ingested into the stomach in considerable quantities without injury, according to M. Magendie, is that in the latter case they are so slowly absorbed that a small quantity of them only can ever be said to be in contact with the blood—they only pass through it, to be promptly thrown off by some one of the emunctories, and, as it were, have no time to act.—Lect. 19.

In a mixture of equal volumes of blood and normal pus, the colour of the former was merely changed, while a perfect clot was formed. In a mixture of artificial serous pus, water and blood, the colouring matter floated on top, and was partly dissolved in the serosity,—the globules were few in number, and there is no coagulum.—Lect. 19.

Hydrochlorate of soda when mixed with blood, is remarkable like sugar, for not dissolving the globules, but it promotes their separation from the coagulable matter or fibrine; it renders the clot, also, of a very beauti-

ful arterial red, even in its centre where it cannot come in contact with the air.—Lect. 11.

Seven grains of *oxalic acid* were introduced into the jugular vein of a dog. The animal was seized with dyspnœa soon after; his condition grew worse every hour, and he died next morning. On dissection, the lungs were found not to collapse when the thorax was opened; the pulmonary artery being cut into, fluid and brownish blood flowed out, and the cells of the lungs were distended with fluid blood.—Lect. 15.

A microscopical examination showed that all the acids experimented with, gave rise in the blood to very nearly the same phenomena. Not a trace of fibrine was discoverable in the various solutions. The blood acted on by the acetic acid, was almost transparent; some nebulous flocculi and very delicate filaments only were observable here and there. In that acted on by the lactic acid, some delicate particles in suspension were detected, and globules of a particular sort, forming small masses by their union; the colouring matter and fibrine had totally disappeared. In that acted on by the hydrochloric acid, some bodies were discovered of unusual form, held in suspension, some of them rectilinear, others curved in the shape of an S, others in that of a crescent; still some traces of globules were to be seen, larger than those of normal blood, and hence probably in a state of disorganization. The solution of the blood mixed with tartaric acid was the least perfect; here and there were to be seen large coloured globules of various dimensions; close to these, others of the same form, but colourless; next some much smaller, and finally, irregular corpuscula. The colourless globules, the lecturer remarks, resembled the large white globules which are to be seen in blood immediately after it has been drawn. "Now," he adds, "no corpuscula of this kind are to be seen in blood in circulation, and it would consequently be very curious if tartaric acid possessed the property of rendering these globules apparent. All the other substances tried had entirely liquefied the blood; no trace either of globules or fibrine was perceptible in the mixtures made with them."—Lect. 15.

M. Magendie submitted the blood to the action of the various gases. The *oxygen* was partly absorbed; the coagulum was of a scarlet red colour, firm and perfectly coagulated. *Nitrogen* did not prevent solidification; was not absorbed; the clot presented no vermillion tint at the points of contact with the gas. *Carbonic acid* did not prevent solidification; the clot was tolerably firm, of a brownish red colour, approaching to black; the serum was reddish, and lay above the clot. *Oxide of carbon* was not absorbed. A firm coagulum formed of a brilliant surface above bathed in deep red serum. *Quadro-carburet of hydrogen*, allowed of the formation of a firm clot of a violet colour; the serosity perfectly limpid and distinct from the clot. *Cyanogen* was more abundantly absorbed than any other, M. Magendie supposes, in consequence of the alkalinity of the blood, it having a strong tendency to combine with alkalies. *Chlorine* completely decomposed the blood, rendering it black.

By a microscopical examination of the blood subjected to the gases, M. Magendie discovered in the blood submitted to *oxygen*, a mass of globules of the ordinary shape, remarkable for the distinctness of their central point; besides, there were to be seen a great quantity of other globules, resulting from the union of smaller globules, and very closely resembling pus; while some of these last described bodies separated from each other

and floated in the serosity. To examine them more distinctly, he mixed them with serum, which, to his astonishment, dissolved them entirely. These lenticular bodies, which are evidently of a distinct species, and had never been previously observed, either by himself, or so far as he is aware, by other physiologists, appear to the lecturer to have been developed under the influence of the oxygen.

In some blood mixed with *hydro-sulphuric acid gas*, he found some globules which were unchanged, and an innumerable quantity of globular points, half white, half black, as though a line of intersection had separated an ordinary globule into two parts. These globules appeared to execute movements, to oscillate in various directions, with extreme rapidity, describing curved, straight, or irregular lines, as is done by the microscopic animalcules termed *monads*.

Nitrogen alters in no wise the conformation of the globules, or of the agglomerations of minuter globular bodies, already mentioned in the case of oxygen gas. The action of the two gases, M. Magendie remarks, would appear to be very analogous.

The lecturer tested by experiment the influence of temperature on the coagulation of the blood; he submitted it to a temperature of 14°, and to that of 50° to 55° Réaumur; from which, and other experiments, he concludes, that neither *cold*, *heat*, *rest nor motion* prevent the occurrence of coagulation, excepting only when blood is received from an artery into the body of a syringe which has been heated to 30° Réaumur; in this case so long as the liquid in the latter receives the impulsion communicated by the heart, it does not form into a mass.

M. Magendie ascertained that blood which coagulated under a temperature of 14° Rêaumur, does not again become fluid as has been asserted, when its temperature was again gradually raised.—Lect. 14.

He considers the fibrine of the blood to be different from that of the muscles. In proof that they are not identical, in addition to the absence of resemblance in their physical properties, he mentions that compared in respect of their alimentary qualities, they differ widely. He has demonstrated, he remarks, by direct experiments, that the fibrine of the blood is but slightly nutritive, whereas that of muscle is extremely so.—Lecture 7.

An old pupil of M. Magendie, M. Denis, has made some very curious researches on the chemical composition of the blood; among other important facts, it would appear from his labours, that the fibrine is nothing more than albumen combined with the different salts.—Lect. 4.

When the blood is removed from the body, it separates, as is well known, into two parts, the one solid composed of the fibrine and the red globules, the other fluid, or *the serum*. The latter is the liquor sanguinis deprived of its fibrine by the spontaneous coagulation of the latter; it contains water, albumen, chloride of potassium and sodium, lactate of soda, carbon, phosphorus and animal matter. In the blood of a healthy and robust male, the serum may be estimated as forming a fifth or a fourth of the whole. In women and children, it constitutes one-third of the mass. But these proportions, according to the lecturer, vary according to age, temperament, and species of nourishment of the individual, as well as a variety of other circumstances. Successive bleedings, closely following each other augment the proportion of serosity, and induce various disorders, and finally death.—Lect. 7.

It is extremely difficult, at first view to determine, in any given case, the relative proportion of the serum and the clot, as under certain circumstances the fibrine, while in the act of solidifying, retains a considerable share of serosity within its areolæ. In such cases, it is necessary to cut the mass into slices, which causes the serosity to ooze out on all sides. If the clot be soft, however quickly coagulation may have taken place, it it is almost certain that it contains serum interposed between its meshes. Lect. 9.

M. Magendie remarks, that in every case of serious disease he has met with since commencing his researches on the blood, the clot and serum have invariably presented some anomaly in respect of their relative volume. In his opinion, a superabundance of serum in the blood is a positive contraindication to bloodletting, and he conceives that this fact will, sooner or later, be admitted as a fundamental position in the treatment of disease.—*Ibid.*

The serum of the human blood being injected into the veins of an animal, gives rise to the most serious consequences. In one animal, it caused retraction of the limbs, and considerable derangement of the cerebral functions; in a previous experiment, it caused puriform effusion into the joints. The injection of the serum of a dog, was followed by an affection, attended by most acute pains resembling those of rheumatism, with remarkable acceleration of the pulsation of the heart.—*Ibid.*

The dog in whose veins ten ounces of human serum was injected, died forty-eight hours after the operation; the blood was rendered so fluid, that on opening a vein in the neck after death, and hanging up the animal by his hind legs, the greater part of the contents of the vessels trickled away. M. Magendie thinks it probable that the fluidity of the blood is to be explained by the alkaline character of the serum introduced. The lesions of the pulmonary organs were not very strongly marked. The most remarkable morbid condition was that of the cephalo-rachidian fluid; it was in the first place reddish in colour, as though the globules of the blood were dissolved in it; in the next it had formed into a sort of coagulum, and seemed of a totally different nature from the normal liquid.

"I am inclined to think," observes the lecturer, "that the albumen of the serum transuded through the capillaries of the pia mater, and so became extravasated into the sub-arachnoid cavity. The injection of simple water into the veins, does not determine this gelatineform appearance of the extravasated liquid."

In some previous experiments of M. Magendie, he produced various disorders of the nervous system, as general trembling, involuntary movements, signs of coma, and various forms of tetanus, from the injection of water in the veins; and on dissection detected disorganised blood under the inner lamina of the arachnoid.

The animal of whose autopsy we are now speaking, presented signs of lesion of the nervous system, and the lecturer considers that its state of prostration, and the frequent contraction of its limbs were induced by the morbid condition produced in the cephalo-rachidian fluid; the animal's right eye, also, was seriously affected, and had already commenced to suppurate. There was marked disease of the intestinal canal indicated by patches in a commencing state of ulceration, with tumefaction and engorgement of the mucous tissue caused by the effusion of blood, and all

the phenomena, which, remarks the lecturer, we see manifested in the diseases known by the name of typhoid affections.—Lect. 10.

M. Magendie conceives that an excess of serosity in the blood, however produced, augments the tendency to inflammation. In repeating the experiments of Brodie on the ligature of the ductus choledochus, he remarks—

"The animals on which I practised the operation, died, without exception, of peritonitis. With a view of preventing this disagreeable result, I practised a copious bleeding before the experiment, fancying, in conformity with the notions then prevalent, that I should thereby infallibly put a stop to the development of inflammation; the inflammation, nevertheless, appeared with even still greater intensity than before. Subsequently, I injected water in the room of the blood withdrawn, but in every instance, peritonitis supervened with greater violence than before, and proved rapidly fatal. At the present time, when more correct notions of pathology have replaced those of former days, it appears to me that the more the blood abounds in serosity, the more probable it becomes that the consecutive exhalation of the serous membranes will be abundant; and hence, that to use the orthodox language, inflammation will be more violently developed."

"I do not hesitate to assert," adds the lecturer, "that the anti-inflammatory bleeding, ordinarily practised before capital operations, may frequently, according to the constitution of the individual undergoing them, help to determine the serious accidents observed to follow those operations."—Lect. 9.

The blood of a patient labouring under *albuminous nephritis*, examined under a microscope, produced, in addition to the ordinary globules, a multitude of little globules, "or rather corpuscula," without any determinate shape;

"These I might almost affirm were formed of albumen. I then proceeded to a slight chemical examination of the serum, being anxious to learn if the serum of this blood would, as in ordinary cases, coagulate by the action of heat. It did form into a mass, but when coagulated, it resembled pus much more strongly than healthy serum; besides this, an albuminous liquid oozed from the clotted mass, which I was unable to succeed in coagulating. The solidified part, too, was less firm and coherent than usual, allowing a glass rod to sink into it simply from its weight. This examination, imperfect though it be, seems to indicate the reality of a morbid alteration of the albumen of the serum, in the disease under consideration."—Lect. 10.

In the animal in whose veins human serum was injected, the urine became albuminous, and on a few drops of nitric acid being added to it, and to a portion of urine from a patient labouring under albuminous nephritis, they both became white and turbid, and presented whitish flocculi of perfectly analogous character in both instances. The colour of the two fluids was not exactly the same, probably depending, as the lecturer supposes, on the variety of the salts that one of them may have contained. The urine of an animal who died after twenty days' total abstinence from solid and liquid nourishment, appeared to be albuminous, as nitric acid threw down a very abundant precipitate in it.

"These comparisons of similar affections, produced by different causes, are very important," remarks M. Magendie; "for if, in the present case, the privation of food induced the disease, it is clear we ought to avoid bleeding, putting on low diet, or otherwise weakening any individual affected with it. I do not, however," he adds, "lay any great stress on this point for the present, as the fancied resemblance may not be a real one."

In the animal on whom the injection of serum was practised, neither the kidney nor any other part of the genito-urinary apparatus presented the least trace of the abnormal granulations described by Dr. Bright.—Lect. 11.

M. Magendie when subsequently experimenting on the urine of defibrinated animals, found that an immense amount of flocculi, of albuminous appearance, were thrown down, but on examining these analytically, he found that they were formed of nitrate of urea, which was also the case with the flocculent precipitate in the urine of the animal who died from forced abstinence.—Lect. 12.

One of the constituents of the serum is *albumen.* Like fibrine it exists in the blood in a state of solution, and like it, too, is capable of forming into a mass, and participates in effecting the nutrition and growth of our organs. According to the lecturer it would appear that, in common with the fibrine, the albumen assists in rendering the blood adapted to pass through the capillary vessels, and that when the blood loses its albuminous ingredient in any way, it becomes extravasated, and is imbibed by the surrounding tissues. Unlike the fibrine, the albumen never undergoes spontaneous coagulation, but it may be rendered solid by heat, alcohol, acids and certain saline substances. The albumen of the serum of the blood, is not identical with that contained in the white of eggs. Thus a few drops of potass being added to the white of an egg, there forms instantly a transparent, solid and elastic jelly, resembling isinglass, composed of albuminate of potassa; added to the serosity secreted by the peritoneum in a case of peritonitis, there takes place a scarcely visible precipitation. Acetic acid forms with the serum of the blood, and the white of an egg nearly similar coagula; when these are exposed to a moderate degree of heat, that from the egg undergoes no change, while that from the serum liquefies, and again becomes solid when allowed to cool. Ammonia, with the white of eggs, gives rise to a transparent gelatinous precipitate, which, when heated, coagulates firmly, presenting the appearance of a vesicular spongy matter; the albumen of serum exhibits none of these characters. Ether only faintly affects the albumen of the serum, but converts that of eggs into a white mass, in the same manner as heat.—Lect. 21.

M. Magendie injected the albumen of eggs into the veins of an animal, and found that after twenty minutes it became changed in its nature, and transformed into albumen, identical in character with that in the blood with which it was mixed. Immediately after the injection of the whites of four eggs strained through a cloth, the animal was seized with vomiting; during the succeeding forty-eight hours, he remained in a tolerably tranquil state, when the whites of two more eggs were introduced; there was no return of vomiting; the whites of two eggs additional being again injected on the following day, the animal died almost immediately. On dissection the blood was found to be in a fluid state. The cells of the lungs were filled with black blood; the left lung was infiltrated in a very remarkable degree; the lungs were tuberculated. The follicles of the intestines were much developed, forming eminences beneath the tunics that invest them. —Lect. 22.

The white of an egg added to blood out of the body, does not prevent the coagulation of the latter, but what is very curious, it is converted into a similar substance with the serum of the blood.—*Ibid.*

M. Magendie repeated the injection of the albumen of eggs into the veins of an animal. The whites of five eggs diluted with five times their

volume of water were introduced into the jugular vein of a dog; the latter experienced no inconvenience whatever from the operation; nor did the blood, which coagulated perfectly well, and contained but a small proportional quantity of serum, indicate by any unusual viscidity, nor by the action of the two chief re-agents, give any evidence of the albumen that had been added to it. Less than a drachm, of a very viscid solution of albumen injected into the carotid of the same animal, produced the most violent struggles, followed by almost immediate death. A solution of dextrine, of about the same viscosity and consistence as albumen, whether injected into the veins or arteries of a dog, produced no apparent effects.—*Ibid.*

"There are," remarks the lecturer, "a considerable number of fluids in the economy which contain albumen, and even in larger proportion than the serum. The ovarian vesicles, for example, are filled with a viscid humour, which is yellowish and limpid, and resembles the albumen of eggs." "On the other hand, certain liquids, which appear almost wholly composed of albumen, really contain scarcely any of that principle. Such, for example, is the fluid which fills the cavities and invests the exterior of the brain and spinal marrow. Still we may state in general terms, with truth, that a certain quantity of the substance in question will be found in all the great accumulations of fluid produced in the economy, whether their existence be the result of a physiological or pathological process. Cysts almost always contain some, and in tumours of that species developed in the ovaries, a considerable proportion is always found. Again, ulcerated surfaces have been known to throw off albumen. I have under my care two young persons affected with lumbar abscess; suppuration has ceased for some time, but has been replaced by the discharge of a viscid matter, which M. Pelouze has ascertained to be formed of pure albumen. There are cases, too, in which the urine contains notable quantities of this principle."—Lecture 22.

M. Magendie injected a small quantity of bile into the pleura of a dog, and a violent inflammation immediately declared itself. The membrane, or rather the subjacent vascular rete, became extremely red, while its sensibility was greatly augmented.

"The contact of the bile," observes the lecturer, "caused the minute vessels to contract, and so oppose the course of the blood in the interior—the consequent stoppage of the circulation caused the extravasation of serum. We can, by injecting any irritating substance into the serous cavities, determine similar effusions; this is even one of the best ways of procuring fibrine dissolved in the serum, and separated from the globules."—"Once out of the vessels, the fibrine promptly forms into masses, and may be easily obtained in the shape of filaments and lamellæ.

"Hence, it suffices to obliterate the capillaries in order to produce effusion either of the blood in substance, or of some of its elements. If you wish to observe the phenomenon still more distinctly, you have only to perform the experiment on larger animals, such as the horse. Give this animal an artificial pleurisy, and quarts of fluid will be exhaled on the surface of the pleura; the fluid will subsequently allow the fibrine it holds in suspension to separate from it, in determinate forms, referrible to a common type of organisation. The serosity is of a citron or fawn colour, and is subject to great variety in the proportion it bears to the false membranes formed along with it."

"It is a curious fact, that the irritating fluid is completely absorbed before any morbid exhalations take place on the surface to which it has been applied. There was no bitter taste in the fluid effused, in consequence of the introduction of bile into the pleura."

"When the fibrine passes from the fluid to the solid state in the living animal, it always carries with it, in the process of organisation, a certain quantity

of albumen. This is especially remarkable in the formation of false membranes, and, indeed, in a variety of other instances. Examine, for example, the liquid exhaled on the surface of cicatrices, which subsequently, by its solidification, forms the pellicle that covers them—treat it by the appropriate tests, and you will see that it is composed of albumen and fibrine."—"In other cases, the albumen is found in an isolated condition. If you leave some pus at rest, its component elements soon separate; an albuminous fluid goes to the top, and a sediment, more or less solid, is found at the bottom. Purulent matter is, in truth, formed of globules and albumen, mixed with different salts of the blood." "I submitted some pus to the action of a pretty strong heat, and a flocculent precipitation of albumen took place, but the globules neither disappeared nor underwent any modification; whence the necessary conclusion that they cannot be composed of albumen."—Lect. 22.

According to M. Magendie, the *globules* of the blood, when examined under the microscope, are seen to consist of a sort of investment, with a nucleus in the centre. But both investment and nucleus disappear by washing, and the water employed becomes red coloured, like the serum in some diseases. From which he concludes that, in the mammalia, these corpuscula are not formed of an investing substance and nucleus, analogous to those of fishes. Hence, he remarks, sanguineous globules are divisible into two classes: those with, and those without, a nucleus. The former belong to reptiles and fishes, the latter to mammalia and birds. The globules of other animals have not been sufficiently examined, in this point of view, to admit of any opinion being formed respecting them. The above opinion, in regard to the structure of the globules, is at variance with that maintained by some physiologists; the lecturer gives it as the result of his experiments.—Lect. 4.

"It has been asserted," says M. Magendie, "that the size of the globules varies considerably in the human subject, and that, under certain circumstances, their diameter does not exceed the 100th, the 120th, or even of the 150th part of a millemètre. Their magnitude does vary; but I feel almost certain that their diameter never exceeds an eightieth of a millemètre. Now this point of limitation to the size of the globules is extremely remarkable, from the relation it bears to the diameter of the vessels in which they are destined to move."—Lect. 4.

According to the lecturer, there are various kinds of globules found in the same blood. In that of the human subject, for example, there are some that exist constantly, and others that are not persistent.

"Among the former are to be ranged the red globules, of different forms and dimensions; among the second, we find the large white globules, of which the uses are equally unknown, though they deserve investigation at the hands of observers, because they form some of the normal constituents of the blood, Along with these, are found other globules, infinitely smaller than the red and white ones, which it has been fancied belong to the lymph or chyle. So far, however, this opinion respecting their nature is merely conjectural."

"It would appear, also, that, in the course of certain diseases, globules of particular structure and appearance are developed."—Lect. 23.

The point which strikes the observer most strongly after the first glance, the lecturer remarks, is, that in the centre of the red globules is seen a black or white point, according to its degree of nearness to the focus of the instrument, and the quantity of the light that falls on it; so that, sometimes one would fancy them perforated in the centre, while, in other cases, a sort of nucleus, distinct from the mass of the globules, is very perceptible. These appearances M. Magendie believes to be deceptive, and not real. According

to some physiologists, the centre of the globules contains a solid nucleus in the mammalia, while, in the opinion of others and that of the lecturer, it is more depressed and thinner in the point than elsewhere.—Lect. 23.

M. Magendie, by the micrometer, ascertained, that the ordinary size of the red globules of human blood varies from the one hundredth and tenth to the one hundredth and twentieth part of a millemètre.

"The term globule," he remarks, "is inappropriately applied to these bodies, for their form is not spherical but lenticular. What proves this is, that when they roll under the microscope, they turn their edge to the eye of the observer. This edge generally measures, in point of thickness, the fifth or sixth part of their superficial extent; seen in this manner, the globule appears thicker than at its middle, which part has the appearance of being slightly depressed, and, as it were, excavated; this is, however, the case only with the globules of mammiferous animals, for those of others, such as reptiles and fishes, present a real swelling in their centre."—*Ibid.*

Even with a magnifying power of eighteen hundred times, M. Magendie has not been able to satisfy himself of the presence of either an investment or central nucleus in the globules of human blood. He admits that it is possible they may be provided with an investment which ruptures.

"Observers are, indeed, generally of opinion that they are surrounded with a very delicate pellicle; and this idea receives some support from the fact, that, in the globules of dead subjects, there is a sort of puckering visible, such as is presented by membranes of extreme thinness, when they begin to dry, for instance, the outer skin of onions."—*Ibid.*

The lecturer has detected the same appearance in the globules of a vigorous and healthy individual, after they stood for a certain time in a vessel.

"This fact seems to indicate that the globules are enveloped in a sort of membrane, and that this membrane is soluble in water, the acids, the alkalies, and a variety of other fluids, consequently they must possess some peculiar properties which enable them to retain their form; otherwise, as the blood contains water and various salts, the globules must of necessity be dissolved."

For the first two or three days, after being drawn from the body, according to M. Magendie, no very evident change occurs in the globules—their surface becomes mottled with minute spots; subsequently, they become the seat of movements of totality, resembling those of infusoria; it is this which has probably made various authors fancy that the globules were, in truth, so many animalcules.

"These movements, which are exceedingly evident, resemble what are called in physiology *vibratile motions*, and are observable in various organs, especially in the mucous membranes of birds, and of the human subject. In the latter, the borders only of the membrane are subject to these vibrations, whereas the centre even of the globule manifests the phenomenon distinctly."

M. Magendie has distinctly perceived small *vibrions* on the globules, moving on their surface, penetrating into their substance, and issuing from it by the edges.

"Finally, the globule diminishes in size, and gradually disappears; it appears to be devoured by these infusoria, which has not been mentioned, the lecturer believes, by any other person. Some globules present a multitude of these animalcules; others, a very few. Thus the blood furnished by a nasal polypus, which he excised lately, contained an innumerable quantity of them."—Lect. 23.

M. Magendie put some globules from newly drawn blood into serum containing a large proportion of vibrions, and observed that the latter "pounced on them with a sort of fury," and destroyed them totally in a very short time. He found these animalcules less active when presented to globules of rabbits' blood; the globules from the blood of a bird they turned over, but almost immediately abandoned. They seemed to regard with even stronger repugnance the globules of frogs' blood; they rushed in troops towards them, but almost immediately quitted them.

In the globules of reptiles, one of the diameters, the lecturer observes, is evidently more elongated than the other—they present a very distinct spot in their centre, and, when they turn on their axis, a prominence is visible on their edge.

"When shaken in water, they dissolve, except the central part, which is white when it has been well washed, and retains the elliptic form of the original globule. Besides these globules, there are other spherical opaque corpuscula to be seen, without any nucleus."—*Ibid.*

"In birds, the globules are elliptic, but have no nucleus." "The globules of reptiles have a mean size of from the forty-fifth to the seventy-fifth part of a millemètre; they are, consequently, much larger than those of mammiferous animals and birds."—Lect. 23.

It has been supposed, by respectable physiologists, that the coagulum of the blood is formed by the adhesion of the globules to each other.—When we examine the clot, it appears quite clear that the globules are present, adhering to the filaments of fibrine, and appearing to form an integral part of it; if, however, the clot be well washed, the globules are carried away, or dissolved according to the nature of the liquid employed, and the consolidated fibrine with all its true characters alone remains. Every fact, indeed, proves that the globules have no agency whatever in the spontaneous coagulation of the blood, and that this depends entirely on the presence of fibrine in its normal state.

"All my experiments," remarks the lecturer, "go to prove that, strictly speaking, we might understand the possibility of life in blood composed of serum and fibrine only. As to the globules, nothing positive is known respecting their uses, and for my part, I know no other kind of utility they possess, beyond that of facilitating the microscopical investigation of the blood. Nevertheless, as they do exist, consequently, there must be some reason for, and usefulness in, their presence in the midst of the vital fluid."—Lect. 12.

The various oscillations, and rising and descending motions observed in the globules of the blood both within and out of its proper vessels, and which have given origin to the idea entertained by some, that the globules are endowed with the power of spontaneous motion, M. Magendie has demonstrated to be mere mechanical or optical phenomena. He has shown, in regard to the agitation which occurs in a drop of blood, dissolved in alkaline or sugared water, that the same phenomenon, precisely, occurs when particles of colouring matter are suspended in distilled water.—Lect. 14.

"With respect to the relations of the globules to each other: those that are circular, when placed in serum, adhere to each other, and form flexible piles of variable length. It is not long since it was believed that these globules, thus heaped and piled one on the other, formed the basis of, or rather actually constituted, muscular fibre; but besides that muscular fibre has not the appearance of globules piled on each other, it is a matter of demonstration that it contains none of them. The modes of agglomeration of these little bodies are so numerous and various, that it is useless to attempt their description."

"The elliptical globules of birds do not form piles or chaplets. they become mutually attached, but this attachment takes place by all the points of their surface, and especially by the extremities of their greater diameter; they thus constitute masses of a particular aspect. They are then seen to adhere to each other by a single point, instead of being superimposed by their whole surface, as in other instances. On mingling circular and elliptic globules together, it was found that those of the same form adhered to each other. It would appear from this, that they are under the influence of the electrical phenomena of attraction and repulsion.

"As for their structure, it is certain that the globules of reptiles contain a central nucleus, surrounded with a lighter coloured areola. In birds, on the contrary, the middle part of the globule is occupied by a nebulous matter, having the appearance of a nucleus."—Lect. 23.

By the experiments of M. Magendie, it was clearly shown that some substances act energetically on the globules, while others have no effect on them. Among the former, are the acids. The hydrosulphuric acid not only destroys their colour, but their whole substance. On the other hand, the bicarbonate of soda tinges them of a scarlet colour. Tannic acid changes their colour to a pale pink.—*Ibid.*

The lecturer injected two pounds and a half of globules, taken from three dogs, into the veins of another dog. The animal died in a few days in a state of extreme weakness; his gait was staggering, like that of defibrinised animals. On dissection, the lungs were found altered in appearance, and covered with petechiæ, as in defibrinised animals, but the blood had coagulated slightly in the vessels; the mucous membrane of the intestines was healthy.

Fifteen centilitres of turkeys' blood was injected into the veins of a dog; the animal died next morning. The lung presented peculiar arborisations, and was engorged with fluid blood. On examining the blood under the microscope, no traces were dicovered of the elliptic globules that had been injected. "It would appear that they had undergone some modification in their passage through the capillary vessels of the animals; and this, if I may be allowed to hazard a supposition," says M. Magendie, "would lead us to believe that the configuration of the minute vessels of mammalia and birds differs."

The blood of twelve or fifteen frogs, the globules of which are much larger than those of the mammalia, and have a central nucleus formed of an element distinct from the colouring matter, was injected into the veins of a young dog—no bad consequences resulted, and not a single globule of the elliptic form could be detected in his blood.

It appears to the lecturer to be an indubitable fact, that the proportion of globules and serum undergoes an increase or diminution under particular circumstances; thus, after a certain number of bleedings, the blood is rich in serosity, but poorly supplied with globules. In the class of affections called anemic, the colouring matter of the blood is to a certain extent lost.

Independently of the red globules, there are, according to the lecturer, others of a different kind in the blood, dissimilar to these in size, conformation, and colour; they are known as the *white globules*. These have neither central spots nor prominence, but a small part of lighter colour than the rest, which gives to them a peculiar appearance; they are flat and lenticular, like the red globules, and often stick to the glass on which they are laid for examination, while those of the coloured species float about, and oscillate hither and thither continually; water, acetic acid and ammonia

dissolve the red, but do not affect the while globules. M. Magendie has never observed these bodies in the blood in circulation. It has been supposed, that they are nothing more than minute fragments of fibrine, which adhere to the object glass in consequence of their coagulation. M. Letellier affirms, that, if red globules be left in a vessel, white ones may be seen to gravitate to the bottom. The lecturer has never seen bodies of this kind in the blood of reptiles, birds, or fishes.

M. Magendie merely alludes to a species of globules distinguished by their mammillated, raspberry-like look. Some suppose this appearance to depend on an optical delusion, caused by the iridescent appearances produced when two plates of glass are not in immediate contact. There is still another kind of globules, of much smaller size, of which the lecturer discovered a large quantity in a patient affected with albuminous urine; they appear to belong, more particularly, to the lymph and chyle.—Lecture 23.

We have now presented a tolerably full exposition of the principal facts in relation to the physiology of the blood comprised in the lectures of M. Magendie. All of these facts are highly interesting and important, while, in many instances, they are established by experiments and observations of a novel and ingenious, but at the same time highly satisfactory, character. It was our intention, had we been able, with justice to our author as well as to our readers, to condense our analysis within a smaller compass, to have noticed some of the pathological views thrown out in the course of these lectures: more especially those in reference to the phenomena generally ascribed to inflammation, which M. Magendie considers to be nothing more than the local expression of the effects resulting from either an alteration in the qualities of the blood, or a want of harmony between the diameter of the capillaries, and the volume of the molecules of the blood, giving rise to an obstruction, to a greater or less extent, of the circulation.

Ingenious and plausible as we are willing to confess his exposition of many of the pathological conditions of the organs and tissues to be, we cannot, however, admit that in all cases they are legitimate deductions from even those facts upon which he has based them, while, also, they run counter to all our experience in relation to the curative powers of most of the ordinary therapeutical agents. They are, nevertheless, worthy of a cautious examination, and cannot fail to have, at least, one beneficial effect: that of directing the attention of physicians to the state of the blood in disease, and to the influence of our remedies in modifying its several abnormal conditions: which latter cannot fail, in our opinion, to keep up and extend morbid action, if they be not, in many cases, its immediate cause. The influence of the blood, and of the changes which it unquestionably undergoes in its physical properties and composition, have been too much overlooked in all our pathological investigations. D. F. C.

BIBLIOGRAPHICAL NOTICES.

ART. XI. *A Treatise on the Eye. Containing Discoveries of the Causes of Far and Near Sightedness, and of the Affections of the Retina, with Remarks on the Use of Medicines as Substitutes for Spectacles.* By WILLIAM CLAY WALLACE, Oculist. Second Edition. New York: 1839. pp. 88, 12mo.

THIS is an excellent little work on an extremely interesting subject. No where in creation do we find a more wonderous structure than the eye, or one which displays nicer or more extraordinary adaptation of means to the end, or which furnishes stronger evidences of wisdom, power, goodness, and design of an intelligent Creator.

The greater portion of Mr. Wallace's Treatise is devoted to an account of the structure of the organ. In the descriptions, the author has avoided technical terms, and the parts are so well delineated in the numerous wood cuts, with which the work is enriched, that the anatomical structure may be understood by any one of ordinary intelligence.

One of the most curious parts of the mechanism, is that by which the eye is adapted to vision at different distances. The focus of the image of distant objects being somewhat nearer to the lens than that of the image of near objects, some changes in the internal condition of the eye are necessary for the purpose of distinct vision at different distances. In what these changes consist, physiologists are not agreed. Mr. Wallace is of opinion that the adjustment is effected by changes of position of the crystalline lens, and that these are accomplished by an appropriate muscular apparatus, which he describes as it exists in the different orders of animals.

Mr. Wallace conceives that in the human eye the adjustment is effected by means of the ciliary processes and particular muscles which he describes. "At the roots of the ciliary processes," he says, "there are muscles with radiating fibres, which are covered by a white ligamentous substance and a thin dark skin, which lines the eye, and keeps them from being readily observed. The vessels which supply the adjusting leaves, [ciliary processes,] pass at the junction of the muscle—a spot where they are not affected by pressure, while the returning veins are so situated, that the progress of the blood as it passes through them may be arrested.

"When the muscles contract, an additional quantity of blood is collected in the adjusting leaves, which, being consequently elongated, draw forward the margin of the case, [capsule of the lens,] to which they are attached, and of course the magnifier [lens] which it envelopes, in this manner adjusting the organ to the vision of near objects, while it is drawn back or adjusted to those which are distant, by the elasticity or spring of the membranes of the vitreous humour which radiate from the magnifier, [lens.]"

This explanation is not entirely satisfactory to our mind. Admitting the existence of the muscle described by Mr. Wallace, a fact which may, however, be supposed to require confirmation, still it is not manifest that the congestion of blood in the ciliary processes, caused by its contraction, will draw forward the lens. In fact, if the vessels increase in diameter as well as in length, which is usually the case when vessels become engorged, the lens would be pressed backwards instead of forwards. To produce the effect imagined by Mr. Wallace by the means he supposes, the vessels of the ciliary processes must be attenuated as well as lengthened.

A careful examination of all the hypotheses that have been offered to explain the adjustment of the eye to distances, leads to the inference that it is effected by a change of position of the lens, and that the ciliary body is the motor power, but how it acts we are unable to explain.

Mr. Wallace concludes his treatise with some observations "on medicines as substitutes for spectacles," and on "the proximate cause of affections of the retina."

The necessity for glasses to aid vision, arises, as is now generally admitted, from an imperfect adjustment of the eye to distances. "As the apparatus by which this change is effected," observes Mr. Wallace, "becomes stiff with age, the magnifier [lens] cannot be brought sufficiently far forward to adapt the eye to the vision of near objects, and the person is obliged to remedy the defect by using glasses."

"Shortsightedness most frequently occurs," Mr. Wallace observes, "about the time of puberty—a period when there is often a morbid excitement of the erectile tissues. As a portion of the adjusting apparatus of the eye belongs to this class, it partakes of the general erethism of the system, and occasions the complaint by drawing the principal magnifiers too far forward."

To invigorate the adjusting apparatus, and thus correct the first described defect, Mr. Wallace recommends, among other remedies, the application of a solution of strychnine to the brow and temple, and the internal administration of the same medicine; and, for the purpose of relaxing the apparatus in question, and correcting the other defect, he advises rubbing over the eyebrows at bed time a very small portion of the extracts of belladonna, stramonium or hyosciamus, as well as the internal administration of small doses of the same remedies. He most truly observes, however, that these medicines are unsafe in the hands of those unacquainted with the practice of medicine; indeed we doubt the safety of their habitual use under the direction of the most careful practitioners, and we would caution all against the use of them.

If we do not agree with the author as to the value of his substitutes for spectacles, neither can we fully coincide with him as to the propriety of delaying the use of spectacles "*as long as possible.*" Whilst we unequivocally reprobate the early resort to spectacles, because the eye gradually becomes accustomed to their use, and higher and higher powers become from time to time necessary, we are fully satisfied that it is equally injurious to strain the eye and subject it to the painful fatigue which is experienced by those who abstain from employing glasses when their vision is very imperfect without their aid.

The views of the author relative to the proximate cause of muscæ volitantes are extremely interesting and plausible, and are fully expressed in the following extracts.

"When the convex surface of the retina is exposed under water, and scratched with a scalpel, a membrane of great delicacy may be separated and turned over in folds, with the assistance of a camel's-hair pencil. This is the coat of Jacob.

"When the same preparation is allowed to putrefy, and the nervous matter washed away with a camel's-hair pencil, the vascular membrane may be exhibited. The ramifications of the blood-vessels on this membrane, resemble that of the veins in a leaf, after the soft part has been eaten away by insects, and by their intertexture, they form a semi-opaque screen, on which is received the image of external objects, just as the ground of a camera-obscura, or the screen of a magic-lantern.

"The nervous matter may be divided into two layers. By allowing an eye to macerate in alcohol, for the purpose of preventing the retina from collapsing, when the anterior half of the eye is cut off, and pouring upon the retina thus exposed, a watery solution of corrosive sublimate, the fibres may be seen lying beneath the vascular membrane, when they are separated by a camel's-hair pencil. In young animals, the fibres are more easily exhibited than in those that are old, and in the human eye they converge round the central foramen. By pouring upon an eye, exposed in the same manner, an alcoholic solution of corrosive sublimate and muriate of ammonia, the fibrous coat becomes so com-

pact and hard, that it may be easily torn off with forceps, and a layer of globules will be brought into view. These globules are kept in place by the coat of Jacob, which is reflected over the choroid, as may be easily seen by opening an eye under alcohol.

"The retina then consists of four layers, a vascular, a fibrous, a globular, and a serous.

"By this exposition of the retina, we may account for the various appearances of *muscæ volitantes.* I have occasionally, when entering an ordinarily lighted room, after a full meal, and exposure to a bright light, witnessed glimmerings like a network, which, from its resemblance to the vascular coat, left no doubt in my mind, that the blood-vessels of the retina were visible: at other times, in the same circumstances, there was a twisted tube, or a chain of beads, as if there had been an error loci of one of the curved fibres of the retina; or there was a cloud of globules sometimes packed together, but more frequently separated, and floating in all directions. Each globule was visible for a considerable time, and repeatedly reoccupied the same space. When clustered together, they had a great resemblance to the globules of the retina.

"From the similarity of the drawing of the floating network, in Case No. 1, to the vascular coat of the retina, I am persuaded that any person who has seen both, will have no hesitation in locating the disease; and if the network, curved filaments, and globules, appear to others as they do to me, the various *muscæ* will be ascribed to affections of the structure which they resemble.

"Beer observed in some cases, that the vessels of the vascular membrane had become varicose. Dr. Wardrop, in his 'Morbid Anatomy of the Eye,' states that 'it was observed by Sauvages, that the pulsations of the optic artery might be perceived, by looking intently at a white wall, well illuminated. A kind of network, darker than the other parts of the wall, appears and vanishes at every pulsation. This change of colour in the wall, he ascribed to the compression of the retina, by the diastole of the artery. Richter mentions the case of a plethoric person, who, when he held his breath, and looked at a white wall, perceived a kind of network, which alternately appeared and disappeared with the diastole and systole of the arteries. Mr. George Young, saw a cadet at Woolwich, who, from being obliged to wear a very tight neckcloth and collar, had sight very much impaired; the pupils were dilated, and he had the appearance of flies floating constantly before his eyes; and Richter relates the case of a man, who became suddenly blind, by carrying a heavy load up stairs.'

"If, when the eye is directed forward at a distance, we move a lighted candle up and down on one side of the line of vision, a representation of the vessels of the vascular membrane shortly appears, as if displayed upon a screen. The vessels are greatly magnified, on account of the portion of the retina which they occupy, compared with that of an ordinary image. We may hence infer, that a very minute congestion, may cause a large musca.

"It is stated by Demours, that the diameter of muscæ appears to increase in proportion as we recede from the plain in which they are examined. Such a filament as appears one-sixth of a line in diameter, and one inch long, when seen on a leaf of very white paper, at the usual focal distance, appears two lines in diameter, and more than a foot long, when we examine it by looking at a white wall, at the distance of twenty or thirty feet; and in the only case in which he mentions the subject, Mr. Ware says, that the magnitude of the moats, depended much on the distance at which they were observed, being larger when seen far off, and smaller when near the eyes. Can the diminution arise from the less degree of pressure as the lens approaches the cornea, when adjusted to near objects?

"As the papillæ of other nerves become erected when excited, it would seem that the fifth, which is a compound nerve, enables the expanded fibres of the optic nerve to be placed in a proper condition for conveying a distinct impression to the sensorium. Should there be any unusual turgescence of the vascular membrane, or any *error loci* of the globules, or of the sentient fibres, or diminished supply of motive power to the latter, or should there be effusion of lymph or varicosity of the choroid, the fibres will not be free to the action of light, but

will convey false impressions, and there will be an appearance of motion, when during their erection or tension, the fibres come in contact with diseased vessels, filaments, or globules.

"It is difficult to keep the eye on one object for a long time, but when it is accomplished, the retina soon becomes fatigued, the fibres lose their tone or tension, and the object disappears. As soon as they have rested, the object comes again into view, and there is an alternate disappearance and reappearance of the object, as long as the experiment can be continued. If, when the light is very obscure, we look intently at a feebly illuminated object, the fibres, in endeavouring to adapt themselves to the degree of light, soon become painfully affected, and the object is no longer visible.

"The connection between the second and the fifth pair of nerves, may explain why there is a halo round luminous objects during *catarrhal ophthalmia*, when the distended vessels press upon the filaments of the latter, which are so abundantly spread upon the conjunctiva; and why in *strumous ophthalmia*, there is such intolerance of light, when the nerves are irritated by exposure in consequence of ulceration of the anterior membrane."

We must not conclude this notice without again recommending the work to notice, and expressing the hope that the author will persevere in his interesting researches.

ART. XII. *Sopra un caso di Fistola Vescico-Vaginale guarita col Caustico Potenziale*, lettera del Dott. MARIANO GAJANI, di Bologna, Chirurgo primario in Macerata, al Chiarissimo, Dott. LUIGI MALAGODI, Direttore del Raccoglitore Medico-Macerata.—1838.

Description of a Case of Vesico-Vaginal Fistula cured by the Application of the Potential Cautery, in a letter from Dr. M. GAJANI, of Bologna, to Dr. LOUIS MALAGODI, Editor of the Medical Repertory of Fano.

THE object of this publication is to show the superiority of the treatment of vesico-vaginal fistula, by the application of lunar caustic over all the other plans that have been proposed, but especially over every species of suture.

After a brief notice of the several modes of treatment suggested by different surgeons for the removal of one of the most disgusting and distressing accidents to which females are liable, the particulars of the case treated by Dr. Gajani are presented.

The patient was a married female, twenty-eight years of age, of a scrofulous habit, with predisposition to rachitis. On the last day of January, 1836, she gave birth to a dead child after a difficult labour of three days duration, during which, from the want of skill in the midwife, the head of the fœtus was allowed to remain fixed for many hours in the superior strait of the pelvis. In consequence of the fundus of the bladder and anterior part of the vagina being thus compressed for a long period, by the head of the child, against the pubis, a sloughing occurred soon after the labour was terminated, giving rise to a fistulous opening between the cavity of the bladder and the vagina, through which the urine was constantly discharged.

The fistula was seated near the anterior portion of the vagina, its longest diameter, presenting transversely, was about one inch, and its shortest, upwards of half an inch.

In the commencement of April, 1836, the patient was placed under the care of Dr. Gajani, who, after some preparatory treatment, intended chiefly to diminish the extensive irritation of the parts caused by the constant flow of the urine over them, applied freely lunar caustic to the edges of the fistula, a catheter being at the same time introduced through the urethra into the bladder, and allowed to remain. The fistula became gradually contracted in size, and, finally, completely cicatrized.

There is nothing peculiarly striking in the circumstances of this case, and no novelty whatever in the treatment, excepting perhaps in the very ingenious and

useful canula and director for the proper application of the caustic to the fistulous edges of the vesico-vaginal opening; a description of which would be of little use to our readers, unless accompanied with a drawing, as in the work before us.

The potential, as well as actual cautery, have been used and recommended in the treatment of vesico-vaginal fistula by many surgeons, especially in France. Lallemand, Dupuytren, and Velpeau, Dr. Gajani himself cites as having, in numerous cases, effected in this manner a complete cure. Liston considers the actual cautery as the only remedy to be relied upon in those cases in which a cure is at all possible. Dieffenbach found both the actual and potential cautery of no benefit in any of the cases in which he tried it. In some instances, he succeeded in effecting a cure by stimulating the edges of the fistulous opening with strong tincture of cantharides; he prefers, however, the removal of the fistulous edges by the scalpel, and the closure of the orifice by suture, performed in a manner peculiar to himself.* A case in which a complete cure was effected by the operation of Dieffenbach, somewhat modified, is related by Dr. Hayward in the last Number of this Journal, page 283.

Some interesting cases, in which the cautery was employed, will be found in the Dublin Medical Journal, vol. 2, recorded by Dr. E. Kennedy. Two cases of complete recovery from the use of the suture, occur in the same volume of the Journal referred to; three cases are also recorded, by Mr. Earle, in the Medical Gazette, for November, 1829, and one by Mr. Hobart, of Cork, in the London Medical and Physical Journal, vol. 5; one case by Mr. Luke in the Medical Gazette, 1831, and one by Mr. Scott in the Lancet, July, 1832.

In a few instances, a cure has been effected by keeping a catheter constantly in the bladder, so as to prevent the escape of urine by the fistulous opening; an interesting case of this kind is related in the Edinburgh Medical and Surgical Journal, for January, 1824, by Mr. Cumin; pressure on the opening has also occasionally succeeded.

The following references are given in the work before us:—
Raccoglitore Medico di Bologna, 1829, p. 38.
Opuscoli della Societa Medico-Chirurgica di Bologna, vol. 8, p. 3.
Memorie dell' Academia Reale di Chirurgia, vol. 3. D. F. C.

Art. XIII. *Sull' asportazione del Labbro Superiore Carcinomatoso con tentata Chiloplastica, ed aclcuni riflessi sull' Autoplastica.* Lettera di Mariano Gajani, Membro del Collegio Medico-Chirurgico nella Pontificia Università di Macerata, &c., al Chiarissimo, Signor Professor Paole Cavalier Baroni Collonnello, e Direttore della sanitá militare in Roma. Marcerata: 1838.

On the Removal of a Carcinomatous Upper Lip, with an attempt at Chiloplasty, and some Remarks on Autoplasty. In a letter from Dr. Mariano Gajani to Signor Professor P. Baroni, of Rome.

The only remarkable particular in this case, is the attempt which was made by the operator to repair immediately the deformity caused by the removal of the upper lip, by forming a new one from a portion of the skin and the cellular membrane of the cheek. The want of success in the chiloplastic operation in this case was due, no doubt, to the age of the individual, sixty years; the state of his constitution, which, it is stated, was not very robust, and probably in some measure to the condition of the parts themselves, which had, for a considerable time, been the seat of disease.

The operation for the removal of deformities about the face, by an operation similar in principle to that attempted in the case before us, is now so commonly performed, and in favourable cases, in which alone it should be attempted, so

* See the No. of this Journal for Nov. 1838, p. 224 and 229.

generally successful, to a greater or less extent, as to render a description of it comparatively uninteresting. The German Medical Journals, in general, present a very great number of instances in which, by an operation similar to the one described by Dr. Gajani, the most frightful deformities have been most successfully obviated.

D. F. C.

Art. XIV. *Sulla Utilità e Preminenza dell' Apparecchio di Moscati nella Fractura del Collo dell Omero*, articolo del Dott. Mariano Gajani, Chirurgio Primario di Macerata. Fano: 1839.

On the Utility and Superiority of the Apparatus of Moscati for Fracture of the Neck of the Humerus. By Dr. Mariano Gajani.

The apparatus of Professor Moscati, of Milan, is similar, in many particulars, to the immovable dressing proposed and strongly recommended by Lafargue, Dieffenbach, Larrey, Seutin, Cunier, Velpeau, and others, in fractures generally, and the utility of which has been, recently, so successful in the practice of Dr. Fricke, of Hamburgh.

According to the plan of Moscati, the arm and shoulder of the fractured limb, together with the axilla, are covered with a simple, smooth bandage; subsequently pledgets of tow, soaked in white of eggs, or, what the writer of the article before us considers preferable, common starch, are applied so as to invest the whole of the shoulder and humeral portion of the arm to the thickness of about half an inch. Four long compresses are then applied; one extending from the neck along the external part of the arm, another in front, and a third behind the arm—these three passing obliquely, are made to cross upon the deltoid muscle—the fourth compress is placed along the inner surface of the arm, and carried sufficiently high to fill up completely the axillary depression. The whole is covered with a simple bandage, and the arm is finally enveloped by a roller, which, commencing at its lower part, is carried up over the shoulder, and then secured by several turns around the upper portion of the trunk.

The experience of Dr. Gajani is decidedly in favour of this apparatus in the particular fracture alluded to; the advantages it possesses over all the apparatus in ordinary use, are, according to him, its great simplicity, its being less liable to displacement, and its more effectually securing the fractured surfaces in apposition and from motion.

D. F. C.

Art. XV. *Ueber die Ursachen und die Behandlung des Spontanen Brandes, nebst Beobachtung eines hieher gehörenden falles mit tödtlichem ausgange*, von Dr. Wegscheider, practischem Arzte in Hamburg; a. d. Zeitschrift für die gesammte Medicin. Juni, 1839. Hamburg.

On the Causes and Treatment of Spontaneous Gangrene, &c. By Dr. Wegscheider, of Hamburg.

Gangrene is denominated spontaneous when it occurs without any evident predisposing or exciting cause, as cold, poison, contagion, wounds or preceding inflammation of the part—as in the gangrene of the extremities of old persons described by Pott, the dry gangrene in general, and that occurring in the mouth of children.

According to Dr. Wegscheider, in the generality of cases that have been hitherto described, though not invariably, as Cruveilhier asserts, the gangrene was preceded by a peculiar inflammation, occurring in the smaller arterial branches, and extending from thence to those of greater size; which inflammation he considers to be the immediate cause of the gangrene, by either causing an effusion of lymph into the arteries and the subsequent formation of a fibrinous clot obliterating the cavity, or by inducing ossification of their coats. That

the obliteration of arteries from the application of ligatures is so seldom followed by gangrene, Cruveilhier supposes to arise from the fact of the obliteration being confined to a single artery in this case, and from its being produced gradually, so that the blood is enabled to find its way onward by a collateral route.

The author considers that Pott was in error when he asserted that no foundation, other than mere conjecture, exists for the opinion which ascribes spontaneous gangrene to ossification of the arteries. Patissier (Dict. des Sciences Méd. art. Oblit. des Artèries,) who, in all cases of gangrene of old persons, detected an obliteration of the arteries by a fibrinous coagulum, doubts, but without reason, whether this coagulum, instead of being the efficient cause of the death of the parts, be not rather an effect of the gangrene.

Dr. Wegscheider presents the details of a case in which an obliteration of the arteries by fibrinous coagula was detected after death.

In some instances phlebitis is the immediate cause of the gangrene (Hébréart Dict. des Sciences Médicales, art. Gangréne—Marjolin Dict. de Médicine.—Boeckel Zeitschrift f. d. Gesammte Medicin, Bde. 2-3.) The latter is not, however, in this case invariably moist, as Bouillaud and Baffos suppose.

Whether a disturbance of the nervous influence can produce spontaneous gangrene, appears to our author very problematical, notwithstanding the cases cited by Boeckel. He views in a similar light those instances in which the production of the gangrene has been referred to an arrest of the circulation through the lymphatic vessels. He considers it very possible, however, that a defect in the composition of the blood, as in cases of scurvy and water kanker, is often the cause to which the gangrene is to be referred.

In certain cases another disease affecting the organism would appear to Dr. W. to stand as the immediate cause of spontaneous gangrene. In one of Pirogoff's cases (Zeitschrift f. d. Gesammte Medicin, Bd. 9.) and in another described in the Würtemburg Correspondenzblatt, (Bd. 8.) the gangrene occurred in the course of a gastro-nervous fever. The fever which preceded the gangrene in Dr. Schenk's case appears to Dr. W. to have been rather of a nervous type than rheumatic, as supposed by the relator.

According to Marjolin (Dict. de Méd.) ossification of the valves of the heart often precedes spontaneous gangrene; and Giraud observed the disease in two cases in which the parietes of the left ventricle were thinned and the cavity dilated. In the case of Liégard (Revue Méd. 1837) the heart was large, the left ventricle hypertrophied, the corpuscula of the aortic valves greatly enlarged, and the mitral valves in many spots ossified. The diameter of the aorta appeared larger than usual. Clark (Lond. Med. Gaz. 1837) found in his case the heart very much enlarged, the right auricle considerably dilated, and of as muscular a structure as the ventricle; the mitral valve was cartilaginous. In this case, however, as in that described by Dr. W. the gangrene followed exposure to cold.

Aldis (Zeitschrift f. d. Gesammte Medicin, Bd. 3.) describes a case where the gangrene was consequent upon an attack of purpura hemorrhagica. Cruveilhier saw once spontaneous gangrene occur in the course of an asthmatic affection. Crisp (Zeitschrift f. d. Gesammte Medicin, Bd. 3.) saw a case in which the gangrene was preceded by pneumonia. This case is also remarkable from the fact that no pulsation could be detected at the wrist, and the large arteries, after amputation, scarcely bled; and yet they are said to have presented scarcely any traces of disease, and to have contracted as usual.

Macfarlane (Ed. Med. and Surg. Jour. 1837) believes that in his case the obliteration of the arteries was the consequence of an inflammation produced by the undue application of heat to the parts.

Boinet (Lond. Med. Gaz. 1836) found, upon dissection, in a case of spontaneous gangrene, the pancreas invested with a pale coloured, firm tegument, and the cortical substance of the kidneys hardened; somewhat similar lesions occurred in the case described by Dr. W.

The prognosis in cases of spontaneous gangrene is in general unfavourable: when, as occurs in many cases, both extremities are simultaneously affected,

and the gangrene extends rapidly, a cure is scarcely to be hoped for; but when even a single extremity is affected, death, it is to be remarked, very often ensues. In the several cases recorded by Schenk, Pirogoff, Aldis, Boeckle, Crisp, M'Cready, Macfarlane, and Spender, the life of the patients was happily saved.

In regard to the treatment of this affection, Pott was the first to advise large doses of opium and locally emollient applications. According to Cruveilhier also, the severe pain with which the gangrene is in general accompanied would appear to demand the free use of opium; and in nearly all the cases that have been referred to, evident relief followed the use of this drug. In Pirogoff's case, in which in seven weeks 532 grains of opium were administered, a complete cure, after spontaneous separation of the gangrenous parts, was effected. P. Franck saw an instance in which a complete recovery occurred from the use of two grains of opium and three of musk, twice in the day, notwithstanding fourteen grains of opium, continued for many days, had not exhibited the least effect. After the opium, the amputation of the affected limb appears to be the chief remedy, notwithstanding Dupuytren and Cruveilhier both object to it. It will, it is true, occasionally fail (Ducas, Ségond—Gaz. Med. de Paris, 1837—Zeitschrift f. d. Gesammte Med. Bd. 6.) Schenk, Macfarlane and Mott have seen the best results follow the operation. Ségond exarticulated at the shoulder joint the gangrenous arm of a patient, and is inclined to refer the unfavourable result in this case entirely to the disgust for life of the patient, and his obstinate refusal of all food and medicine.

In conformity with the doctrine which refers spontaneous gangrene to arteritis as its proximate cause, Dupuytren had recourse to blood-letting in place of tonics in its treatment, but without any beneficial result; nor was any more decided advantage derived from the employment of local blood-letting in the hands of Cruveilhier. M'Cready, however, succeeded in curing a case by the repeated application of leeches, after opium and cataplasms had been employed without effect. Boeckel, in a case which he referred to diminished nervous influence, arrested the gangrene and restored the patient to health by the employment of opium and bark internally and lotions to the deceased part of the chlorate of soda; and Spender employed with good effect a flannel bandage firmly applied above the gangrenous part, with internally bark, wine, and a nourishing diet, and, after the formation of a line of separation between the dead and living parts, emollient cataplasms to favour the separation of the former.

D. F. C.

Art. XVI. *Plates of the Arteries, with References, for the use of Students.*—By Paul B. Goddard, M.D., Demonstrator of Anatomy in the University of Pennsylvania, &c. &c. Philadelphia, J. G. Auner, 1839, pp. 49. 4to. plates. XII.

The design of the author, in this work, is to place before the student "a series of plates, agreeing accurately with the standard anatomical descriptions of the day, containing every trunk of sufficient importance to merit description, placed in the exact anatomical relation to other parts." The plates are twelve in number, several of them original, the majority, however, taken either from the great work of Tiedemann, or the splendid one of M. M. Bourgery and Jacob. They are done on stone, and for *perfect distinctness*, they excel any lithographic plates of anatomical subjects yet executed in this country.

Dr. Goddard, by the publication of this work, has afforded to medical students, facilities for the acquisition of an accurate knowledge of a most important and difficult part of anatomy; and is entitled for it, to a large share of their gratitude.

ART. XVII. *Human Physiology, for the use of Elementary Schools.*—By CHARLES A. LEE, M.D., Late Professor of Mat. Med. and Med. Jurisp. in the University of the city of New York. 2d Ed. New York, 1839, pp. 336, 12mo.

Of the feasibility of inducting children into the mysteries of Physiology, or of the *cui bono*, if practicable, we do not mean to inquire. The attempt to render a knowledge of every science universal, is at all events in the spirit of the age, and the work of Dr. Lee is as likely to aid in the accomplishment of the objects for which it has been prepared, as any we are acquainted with. The plan is well arranged; the language simple and clear; and the wood cuts very numerous and distinct, speaking to the eye and rendering intelligible what could not be readily explained by mere language.

It has been rather fastidiously and importunately urged against this work that it is deficient in originality. If the charge be even founded, it shares the fault in common with nearly all kindred publications, and, indeed, with many of higher pretensions, which the same sharp sighted critics have received in their most gracious manner, and with every epithet of admiration and approbation.

To those teachers who have determined that physiology shall enter into their scheme of instruction, the work of Dr. Lee may be safely recommended. The rapidity with which it has arrived at a second edition, and the favourable commendations it has received from those experienced in the instruction of youth, are conclusive of its value as a text book for schools.

ART. XVII. *Observations on the Typhoid Fever of New England*—Read at the annual meeting of the Massachusetts Medical Society, May 29, 1839. By ENOCH HALE, M.D., Attending Physician to the Massachusetts General Hospital.

THESE observations are exceedingly interesting, and we shall, probably, in our next number, present a full analysis of them. In the mean time, we must not allow the opportunity to escape of commending them to the attention of the profession, as embodying the results of careful inquiries into the pathology of the Typhoid Fever of New England, as exhibited in its physical signs, and its anatomical appearances, by a practitioner of sound judgment, and a most thorough and cautious investigator.

SUMMARY

OF THE

IMPROVEMENTS AND DISCOVERIES IN THE MEDICAL SCIENCES.

SPECIAL ANATOMY.

1. *Segato's method of preserving dead bodies.*—Our readers are already acquainted through the letter of Dr. Bruen, inserted in the No. of this Journal for May, 1838, p. 251, of the discovery of Sig. Segato, of a new method of preserving anatomical specimens, the results of which are so extraordinary as almost to seem fabulous. In the *Lancet* for 13th of April last, we find an account by Dr. Edward Charlton, of the specimens preserved in Sig. Segato's cabinet, which contains some particulars of so much interest that we shall transfer it to our pages.

"On visiting Florence in May, 1838, I immediately inquired for the cabinet of Segato, he himself having died nearly two years before. It was with considerable difficulty that I obtained permission, through the kindness of Professor Betti, to inspect the preparations, as they are not now shown to every visitor. Signor Fumigalli, in whose house they are at present preserved, allowed me to handle and examine each specimen at my leisure, and most courteously assisted me with all the information in his power. The following is an extract from the observations I then committed to paper, May 5th, 1838:—

"It is stated in the pamphlet of the Advocate Pellegrini, which I read two years ago in Edinburgh, that the objects prepared by Segato possessed the hardness of stone, with the flexibility of the living fibre. They do *not;* but their general hardness is akin to that of mahogany (I mean of the preparations of internal organs,) while the integuments of the hands, feet, &c., feel as if a tight cover of parchment, or white leather, had been drawn over the horny, yet still pretty flexible, muscles and tendons. Most of the preparations *can* be indented by the nail, but require considerable force to be exerted before you can leave any mark upon them, though any iron instrument would scratch them as easily as it would rosewood or mahogany.

"The foot of a young woman was the first object shown to me; it was of a dead-whitish colour, like that of a corpse; and the skin felt as if half tanned, and adhered very closely to the subcutaneous tissues. There was not here the plumpness of life; but it was not much more shrunk than is the foot of a person who has died of a lingering disease. The muscular parts of the plantar surface of the foot appeared shrunk in proportion to the rest of the tissues, though as very little fat appeared at the point of amputation, I suspect the subject had been an emaciated one. The foot had been severed about an inch above the ankle-joint, where little muscular substance is found; but what I saw was of a light yellowish-brown colour, and had the feel and consistence of horn. The toes of this foot were flexible to a very considerable degree. Of two hands the colour of the skin was considerably darker, approaching to a light brown; but all the fingers were flexible, though somewhat stiff. About the foot I thought I could still per-

ceive a very faint smell of fat; but the hands were perfectly inodorous. In the same drawer was the head of a fœtus of about eight months, which was, indeed, curious, as the process of putrefaction, which had commenced, had been completely and suddenly arrested. Here the colours were well preserved, the greenish hue of incipient decay, being very apparent, the skin nearly of the natural colour, and the whole hard and firm, nor much less plump than in life. I found it very difficult to imprint any mark with my nail upon this head; the soft down on the scalp was perfect. In the same drawer was a portion of liver, hardened and polished on one side; this did not please me, its colour was so dark that but for the form I could not have recognised it, nor could I perceive any traces of acini, or veins. It could be indented by the nail, and was much lighter than a similar portion of fresh liver, being little heavier than a portion dried by exposure to the air, although it differed from this, in being little, or not at all, diminished in size. In a flat piece of wood were several inlaid and polished portions of various organs and tissues of the human body. I may particularly instance two large round portions of the placenta, wherein the red blood-vessels, running in every direction in the yellowish surrounding tissue, resembled, very closely, some of the varieties of serpentine. In another square of wood, were inlaid two portions of the kidney, cut and polished, and beside them two pieces of polished box-wood. The latter I could easily indent with my nail; the former received no impression whatsoever from all the force I could exert. Perhaps the greatest curiosity was a little tablet, about a foot and a half square; portions of the human body, to the extent of about 80 different pieces, are here inlaid in small cubes. Nothing can be more beautiful than the polished slices of hardened cuticle from the soles of the feet; they are extremely hard, yellowish, and transparent, like the yellow sulphate of lime from Volterra. Portions of the kidneys, tonsils, lungs, &c., exhibited their natural hue, and could be instantly recognised by any one at all conversant with their structure. In a glass case is the thorax of a young girl of 17; the plumpness of the mammæ is here admirably preserved; but though I do not suspect Segato of any deceit, I should have wished to have examined it more closely, ere I would assert that the parietes of the thorax were perfectly entire. The appearance of the skin, in this case, raised a suspicion in my mind, for it exactly resembled white leather, having all the glistening appearance of tanned sheepskin. I speak cautiously of this specimen as I could not handle it, and the edges were entirely concealed by drapery.

"By far the most satisfactory part of Segato's preparations are the preserved fishes, reptiles, and insects; these far exceeded my most sanguine expectations. Some lizards and small serpents are hard as horn, very light, and every scale, every proportion, and their colour, are perfectly preserved. A few birds, among the rest a canary bird and a chaffinch, have been subjected to this process. Though less resembling life than the birds stuffed by Waterton, or our best London preservers, their bodies are pretty plump, and perfectly hard and compact; but the moths, which abound in the case where they lie, have made sad havoc with their feathers. The canary bird, as we are told by Pellegrini, and as I was also assured by Signor Fumigalli, was placed under water for two months during the lifetime of Segato, and, at the end of that period, taken out unchanged. The destroying moth could not evidently advance farther than the feathers; nor could they injure any insects that had been subjected to the preservative process; for while numerous other unprepared ones in the same case had been nearly or totally ruined, those prepared, though some were of the tenderest description, had escaped uninjured. Here were also numerous dissections of frogs, toads, and fish. A perpendicular section of a perch was very remarkable, as the colours and proportions of the parts had been most completely preserved. It appeared to me that this specimen had been *varnished*, but certainly it had not been painted. A portion of the brain of a child was extremely hard, but of a light hair-brown colour, somewhat greasy to the touch, and by no means free from animal odour. Signor Fumigalli showed me one of the fish which he said, was "not completely *salicified* through," and stated that several of Segato's

earlier preparations had had the same defect. The parts farthest remote from the circumference were certainly, in this instance, much softer than the internal ones, though, at the same time, they did not appear shrunk."

"Such are the results of my examination of these specimens, and I have copied them exactly from the notes taken on the day of the visit. I hope I have shown that the accounts of some previous writers, though exaggerated, were by no means altogether unworthy of credit. From a personal friend of Segato I received a few particulars concerning him, which may not be without interest to some of the readers of THE LANCET.

"Segato was, unfortunately, obnoxious to the government of Tuscany, on account of his extreme liberal opinions. He, on one occasion, presented a petition to the grand duke to be allowed to preserve the entire body of a child of 11 or 12 years of age, and prayed, that should any such die in the hospital unclaimed, it might be given over to him. The petition was referred by the grand duke, who really admired, but dared not openly favour him, to a committee, and here the malice of his enemies prevailed and the humble request was denied. Too poor to purchase, even in Florence, where a body costs but a few francs, Segato was obliged to content himself with what his friends could supply, and was never able to make trial of his process on a grand scale. But this would have been of but small moment; time would have done justice to his merits, had not, through his childish selfishness or timidity, his secret gone with him to the grave. So fearful was he lest it might be discovered, that he never would commit the slightest hint of it to paper, though repeatedly entreated to do so by his friends. They earnestly begged him, at least, to leave it in his will, which would remain sealed till after his death; but, with a childish obstinacy, he constantly refused. On his deathbed, Mr. Sloane, my informant, and others of his friends, renewed their solicitations, and at length convinced that he could not survive, he appointed the next morning to reveal to them his process. The morning came; they repaired to his house; Segato was speechless, and died in the course of the day. His collections have been carefully preserved; and, as a commission has been named by the government to treat for the purchase of them, it is to be hoped that, ere long, they will be freely opened to scientific investigation and analysis, by which alone we can now hope to obtain a hint of the mode of preserving objects so perishable. But, should this method be entirely lost, I trust that this account of the specimens preserved by it, will prove that it is a misfortune to be deeply regretted by the scientific world.

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2. *Congenital absence of the Liver.*—This rare malformation was found by Dr. KIESELBACH, in a human embryo, which was in all other respects, well formed. The umbilical vein passed through the umbilicus to the part which the liver usually occupies, without dividing; there the portal vein received it, and divided into two branches, one of which passed to the vena cava, but the other divided into innumerable ramifying branches, which terminated blindly. There were no traces of hepatic veins. One cannot, therefore, regard the flocculent division of the branches of the umbilical vein as residue of a liver which had once existed, and at a later period had, from some cause, wasted. The case is probably to be regarded as one of those rare arrests of development in which one of the most important organs is not formed, but in which a vascular growth occupies its place.—*Lond. Med. Gaz.*, July, 1839, from *Froriep's Neue Notizen*, No. 159.

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3. *Description of the blood-vessels of Tendinous Tissues.*—JAMES PAGET, Demonstrator of Anatomy, &c. at St. Bartholomew's Hospital, gives the following description of these vessels:

"The vessels connected with the tendons are of two kinds, one set being distributed in the loose filmy cellular tissue, or synovial sheath surrounding the tendon; and the other in its very substance. The vessels of the sheath are easily injected, and are those which are generally preserved in museums, and figured as the vessels of tendon. Their chief trunks are of considerable size,

and pass to the sheath near the middle of the length of the tendon; their branches are given off with great irregularity, and after traversing the tissue in a vaguely arborescent form, and frequently anastomising, terminate in a moderately dense network. Each artery has two associated veins.

The vessels of the substance of the tendon are quite distinct from these. They run in straight and parallel lines, from one end of the tendon to the other, between the fasciculi, rarely giving off branches and rarely anastomizing. Of the few branches which are given off, the greater number separate gradually and at a very acute angle from the trunk, and then pursue their course parallel to it; but occasionally a branch passes transversely across the intermediate tendinous fibres, from one vessel to another adjacent to it. The vessels of the substance communicate but rarely with those of the sheath of the tendon, and are derived from the vessels of the muscle or of the part in which the tendon expands to be inserted; so that I have sometimes succeeded in completely injecting both ends of a tendon, while the vessels of the middle portion remained empty. Each artery is accompanied by a single vein.

According to the measurement of my friend, Dr. Baly, the diameter of the straight vessels is about 1-1650th of an inch; and they retain the same size through their whole length. The spaces intervening between the adjacent and parallel vessels are much wider than the vessels themselves; yet, in a well injected and dried tendon, they are sufficiently close to give to the whole mass a brilliant red colour when it is viewed from a short distance against a dark ground. In their degree of vascularity, I should place tendons between muscles and the compact structure of bones; the place which would also be suggested by a comparison of the respective activity and completeness of the powers of repair of each of those tissues.

The same general plan of vascular arrangement is found in all the tendinous tissues. In the aponeuroses and in the fasciæ which contain tendinous fibres, the arrangement is somewhat complicated; the cellular interspaces between the glistening tendinous fasciculi are larger than in the tendon, and numerous minute vessels pass irregularly through them, from one surface of the membrane to the other. A linear and parallel arrangement of the proper vessels is, however, easily discerned, and where the membrane is composed of two series of tendinous fibres interwoven at right angles, with each other (as in the palmar fascia, where it separates into slips near the articulations of the metacarpal bones with the phalanges,) there are also two sets of straight and parallel vessels crossing each other in different planes.

In the cordlike ligaments, the same arrangement of vessels is found as in the round tendons; and in the expanded ligaments the same as in the aponeuroses. In both, the vessels of the tendinous tissue are distinct from those of the cellular tissue enveloping or incorporated with it, and the general vascularity of the whole is in direct proportion to the quantity of cellular tissue. In the fibro-cartilages also, (as far as I have been able to inject them,) the same plan exists. In the semilunar cartilages of the knee-joint, for example, vessels run in the substance of their thick margins, in arcs of concentric circles, following the course of the tendinous fibres.

It is not easy to imagine why it should have appeared so difficult to inject the vessels of the more perfect tendinous tissues. The material which I have employed is the common mixture of size and vermilion, which I have impelled with some force into one of the main arteries of the limb. The cellular sheath should be dissected off, and the tissue slowly dried, with care that it is not too much stretched. The first and best injection I have made is of one of the flexor tendons of the foot of a calf about a week old; and I imagine that young subjects are the best; but I have succeeded in effectually injecting all the tendinous tissues of the leg and arm in persons of between 30 and 40 years of age.—*London Med. Gazette*, July, 1839.

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4. *Discovery of Muscles which Rotate the Vertebræ.*—By Prof. Theil, of Bern. The rotatores dorsi are muscular fasciculi, situated beneath the multifidus spinæ,

and separated from its fasciculi by cellular tissue. They are found only in the dorsal portion of the spine, and are usually eleven in number on each side. They arise from the transverse processes of the dorsal vertebræ, from the second to the eleventh, and each is attached by fibres running transversely inwards, to the arch of the vertebra next above that from which it arises. Each muscle, covered by the multifidus spinæ, is fixed by short tendinous fibres to the upper edge and posterior surface of the transverse process, and by fleshy fibres to the lower edge, and in part to the posterior surface of the arch, up to the base of the spinous process. The muscles have not all the same size; the lowest are largest, except the eleventh, which is small. The uppermost generally passes from the transverse process of the second dorsal vertebra, over the first, to the arch of the seventh cervical.

Professor Theil has discovered perfectly analogous muscles in the dorsal portion of the spine in several species of quadrumana, carnivora, and rodentia.—*Lond. Med. Gaz.*, from *Müller's Archiv. Heft.* 2. 1839.

GENERAL ANATOMY AND PHYSIOLOGY.

5. *On the formation of Urea in the Animal Body.*—In illustration of this subject, Dr. Marchand has employed a modification of the experiment of removing the kidneys from dogs that had fasted for many days, and then seeking for urea in the blood (see Müller's Physiologie, Bd. 1. p. 586.) He has not starved the dogs on which the experiments were performed, but has fed them on perfectly pure sugar, which he had ascertained by the most careful examination to be entirely free from azote. He fed a large, healthy, and strong sheep-dog for 14 days with milk, to see how large a quantity of urea the urine of an animal thus simply nourished would contain. After the first five days he found 2.6 per cent. and in the next five days 3 per cent., at which proportion it remained stationary. The animal was now fed with perfectly pure distilled water, and pure sugar, of which he took 10 ounces daily. After six days, in which the dog appeared in very good health, the urine contained 2.8 per cent. of urea; in the next five days only 2.4 per cent; and after five days more only 1.8 per cent. The animal was now very thin and rather weak, but there were no ulcers on the cornea such as Magendie speaks of. He was now fed again with milk and *bouillon*, on which he rapidly recovered himself; and it was interesting to see that the proportion of urea in the urine did not keep pace with the improvement of condition, for the dog had recovered his *embonpoint*, while the urine still contained only 2.4 per cent. of urea. After 14 days of recovery under this diet, when the urine contained from 3.2 to 3.35 of urea, the dog was again fed on pure sugar and distilled water. After 8 days the proportion of urea fell to 2 per cent. The renal nerves were now tied, an operation followed by the same suppression of urine, with less danger than that of extirpation of the kidneys. The wounds soon healed, and for six days no particular symptom occurred; then vomiting and diarrhœa set in. Ten days after the operation the jugular vein was opened, and three pounds of blood drawn; from this blood urea was extracted, in a quantity amounting (in its combination with nitric acid) to 4.88 grains.

This fact seems to prove that the urea proceeds from the animal substances already formed in the body, and not, or at least not only, from unassimilated nutriment containing nitrogen.

Dr. M. has also obtained almost a direct proof of the presence of urea in healthy blood. The most remarkable property of this principle being its power of producing by its mere presence a different crystalline form in common salt than that which is usual, he has used this as a test of its presence. He found this test so delicate, that he could discover by it from 1-10th to 1-20th of urea, in from 100 to 150 parts of water. He mixed 20 pounds of serum of cow's blood with absolute alcohol, and filtered the fluid from the albumen. The fluid

was then evaporated to dryness in a water-bath, and the residue was completely exhausted with absolute alcohol; the latter was then distilled off, and the residue was dissolved in water and mixed with some common salt. After a few days some octohedral crystals formed, which were found to be pure hydrochlorate of soda; and as no other substance is yet known capable of producing this change of crystalline form, the presence of urea in healthy blood, may fairly be assumed—*Lond. Med. Gaz.* June, 1839, from *Müllers Archiv. Heft.* 1. 1839.

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6. *On the Structure of the Corpus Luteum.*—Rorert Lee, M. D., read before the Royal Med. Chirurgical Society, at their meeting on the 11th of June last, an interesting paper on this subject. He represents the Graafian vesicle in the human ovarium as a small spherical pellucid sac, containing the ovum, the granule, and the fluid with which it is surrounded. The vesicle itself he describes as always consisting of two membranous layers or coats, closely adhering together, the external surface being loosely united to the proper substance of the ovarium by soft cellular tissue, blood-vessels and nerves.

When impregnation takes place, the coats of the Graafian vesicle and peritoneum covering it burst, the contents escape, and around it a corpus luteum is gradually formed. The author states that the observations of De Graaf, Haller, and others, have proved that the corpus luteum is gradually formed in that ovarium from which the impregnated ovum has escaped; but it has not been positively determined by them whether the corpus luteum is produced by a thickening of the inner layer of the vesicle, as Professor Baer has supposed, or between the coats, as Dr. Montgomery believes, and if corpora lutea are not sometimes formed in the ovaria of women who have never been pregnant.

The author then proceeds to describe the appearances which he observed in the ovarium of a woman who died in St. George's Hospital, at the end of the second month of pregnancy, which have induced him to conclude that the corpus luteum is formed around both layers of the Graafian vesicle, and not between its coats, or by a thickening of the inner membrane. In the preparation of the ovarium the Graafian vesicle, like a small cyst, consisting of two distinct layers separated from one another, were clearly seen. A drawing of the recent corpus luteum, which had a deep orange colour, was likewise exhibited.

In two specimens of Fallopian tube conception, which were placed upon the table, the Graafian vesicle was likewise seen, surrounded by the corpus luteum. The same fact, the author adds, is still more evident in the ovarium of the gravid uterus of ten weeks, described and figured in the 17th volume of the Medico-Chirurgical Transactions.

In several of the preparations in the Hunterian Museum, at the College of Surgeons, which the author has recently examined, with Mr. Owen, he states that the Graafian vesicle is alse seen inclosed within the corpus luteum, and forming its central cavity.

The author concludes this part of the paper by recommending additional observations to be made upon the subject, when opportunities, which are not very frequent, present themselves, in order that the correctness of the view which he has given of the structure of the corpus luteum may be rendered perfectly conclusive. All observations upon the subject, to be decisive, he remarks, should be made soon after impregnation and the date of conception, and all other circumstances should be clearly stated.

The author next proceeds to describe the changes which the corpus luteum undergoes in the latter months of pregnancy, and after delivery; and observes, that it is frequently almost wholly absorbed about the end of the third month subsequent to parturition. Various preparations were exhibited to illustrate these appearances.

In the ovaria of women who have never been pregnant, yellow oval-shaped bodies, he observes, are frequently found, which it is difficult to distinguish from true corpora lutea resulting from impregnations. The greater number of

these are produced by blood extravasated, within the Graafian vesicles; and he thinks they can generally be distinguished from true corpora lutea by this circumstance, that in the latter the corpus luteum surrounds the Graafian vesicles, but in false corpora lutea the yellow substance is usually contained within the Graafian vesicle. A thickening of the coats of the Graafian vesicle, and the changes it undergoes during menstruation, the author also conceives, might readily be mistaken for true corpora lutea. Various preparations and drawings were also exhibited, to illustrate these statements; and Dr. Lee closes the paper with the following remark, that from all the observations hitherto made on the corpus luteum, we may infer that it is never found but as a consequence of impregnation; that the yellow oval-shaped substances found in the ovaria of women who have not been pregnant, may be distinguished from true corpora lutea by the smallness of their size and irregularity of their shape, the greater depth at which they are situated in the ovarium, the absence of the white membranous appearance of the centre, and by the fawn or yellow-coloured substance being inclosed within the cavity, and not formed around the exterior surface of the Graafian vesicle.—*Lond. Med. Gaz.* June, 1839.

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7. Blake's *Researches on the Phenomena that result from the Introduction of Certain Salts into the Circulating System.*—Solutions of many of the salts of potassa, soda, ammonia, baryta, lime, and magnesia, have been, observes the author, injected into the veins and arteries, and the phenomena that have resulted have been, in most instances, studied with the hæmodynamometer. A marked difference in the physiological action of the substances has caused them to be divided into two classes: one class containing those salts that destroy the irritability of the heart as soon as blood containing them is circulated over the parietes of this organ; the other class containing those substances which, without diminishing the irritability of the heart, prove fatal by arresting the pulmonary circulation, apparently owing to an action that they exert on the capillaries of the lungs.

These two classes of substances, distinct in their physiological action, are equally so in their chemical composition; for it is only the salts of soda that do not appear to exert any influence on the irritability of the heart; while the salts of all the other bases (at least of all those that have yet been experimented with) arrest the contractions of the heart when they are introduced into the blood in any quantity.

If the presence of the salts of soda in the blood (continues the author) does not arrest the irritability of the heart, it, however, gives rise to other phenomena, which would place these salts amongst the most rapidly fatal poisons. If a solution of one of these salts is injected into the jugular vein of a dog, the supply of blood to the left side of the heart is cut off in about six seconds, although the contractions of this viscera continue. At the same time the blood accumulates in the right side of the heart and venous system to such an extent, as to produce a degree of pressure on the parietes of the veins, equal to a column of mercury of two inches. This pressure being propagated to the parietes of the ventricles of the brain, as well as to the other parts of the venous system, must necessarily produce on the encephalon a degree of compression quite sufficient to account for the rapidity with which death takes place in the animals submitted to this experiment; all signs of life having disappeared about forty seconds after the injection of the poison into the veins.

After death, the heart still retains its irritability, but so powerful is the obstacle which the capillaries of the lungs oppose to the passage of these substances, that sometimes it has been impossible to detect the slightest trace of them in the left side of the heart. When the quantity of salt injected into the vein is not sufficient to completely arrest the passage of the blood through the lungs, its action on the capillaries of these organs is still manifested by an increased secretion which takes place in the bronchial tubes, and which, in a short time, causes the death of the animal by asphyxia.

The phenomena that follow the injection of one of the salts of the second class

into the veins are very different from those above described. The most striking manner of observing their action is by injecting them into the veins of an animal whose thorax has been previously opened, artificial respiration being performed. In these instances, the pulsations of the heart are *seen* to be arrested in from seven to ten seconds after the injection; and the irritability of this organ is so completely destroyed, that the application of the poles of a galvanic pile, a few seconds after death, does not produce any contractions. This sudden arrest of the action of the heart does not produce death so rapidly as does the stoppage of the pulmonary circulation; sensibility and respiratory movements continuing from two to three minutes after the contractions of the heart have ceased.—*Lancet*, from *Compte Rendu de l'Acad. des Sci.* No. 22.

PATHOLOGICAL ANATOMY AND GENERAL PATHOLOGY.

8. *Ileo-cœcal Abscess, with Perforation of the Intestine and Groin.*—Mr. Ferrall presented to the Pathological Society of Dublin, the recent parts, in a case of this description. The patient, a young girl, was admitted into the Meath Hospital, with tumour in the right iliac region, about fourteen days after the first attack; suppuration of the tumour had then occurred; the bursting of the abscess was soon indicated by a copious discharge of purulent matter from the bowels; soon after this another tumour formed in the upper part of the thigh, separated from the former by a deep sulcus corresponding to Poupart's ligament, below which an opening occurred, through which pus and ultimately fecal matter was discharged. Mr. Ferrall exhibited the mode of communication between the abscess and opening in the groin; the fistula took a direction at first downwards, and afterwards upwards and inwards, the omentum adhered to the parietes of the abdomen and cæcum; the communication from the abscess into the intestine was by two small openings separated by a slip of mucous membrane, and resembling the appearance often seen in the integuments when an abscess opens by a slough.

An important peculiarity in this case was the mode in which the matter had made its way externally, namely, by perforation of the iliac fascia, and descent on the outside of the femoral vessels.

Mr. Ferrall also showed that in this case the communication with the intestine did not, as Dr. Burne supposes, take place through the appendix vermiformis, the appendix being free from disease. The perforation had taken place from the abscess into the intestine, being the third form of the disease formerly described by Mr. Ferrall in the Edinburgh Journal.—*Dublin Journal*, March and May, 1839.

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9. *Ulceration of the Brain.* By George P. May, M. D.—Daniel Prior, ætat. 15, thrown from a horse, Jan. 17. On being visited two hours after the accident, was found to have received an extensive lacerated wound of the scalp, across the right parietal surface, by which the bone was denuded to a great extent. Considerable hæmorrhage from the wound took place, amounting to more than a pint in quantity. He retained perfect possession of his senses, and complained little of his head, but referred his sufferings to his elbow-joint, which appeared to have received a violent contusion. On the fourth day after the injury he was able to come down stairs, and exercise himself in the open air; by this period a great part of the wound had healed by the first intention. For three weeks every thing went on favourably, and the boy appeared to be the subject of little or no ailment. About the commencement of the fourth week symptoms of constitutional irritation began to manifest themselves; the pulse became quick, and the discharge assumed, for the first time, an unhealthy character; this condition continued, without much alteration, for six days, during which time he complained of pain of head.

Feb. 16th he became comatose, in which state he continued until his death, which took place the following day.

Sectio capitis.—The wound of the head had an unhealthy aspect. Around the denuded portion of bone, between the scalp and periosteum, was an accumulation of pus, of a very offensive character; a small piece of the bone was carious, and exhibited some dark-coloured lamella when broken up by the handle of the scalpel; this condition did not extend through the external table. On raising the calvarium two or three drachms of fœtid pus escaped. The dura mater and subjacent membranes of the right hemisphere were completely eroded in two places, one about the size of a shilling, situated immediately posterior to the Sylvian fissure, the other of smaller dimensions, nearer the occipital region; the ulcers extended about three lines into the substance of the brain; their bases were hard, their edges ragged, and coated with yellowish matter; the texture of the cerebral mass around the ulcers was apparently normal; a great quantity of lymph and pus was effused over the anterior lobe beneath the arachnoid membrane. The pia mater was highly injected, and the vessels of the convolutions, and the sinuses were much distended with blood. The whole of the left hemisphere was very vascular; the corpus callosum, septum and fornix, were in an advanced stage of softening; an excavation, the size of a pigeon's egg, was discovered in the posterior lobe, filled with fœtid matter. The appearance of the cerebellum, left hemisphere, and ventricles, was natural. The thoracic and abdominal cavities were not examined.

This case is very interesting, as illustrative of the ambiguity which so frequently invests diseases of the encephalon. Every tissue here appeared to be the seat of some morbid action. The membranes bore evidence of acute and extensive inflammation. The cortical substance was, in two places, eroded to some depth; and the internal parts of the brain exhibited that alteration of structure most usually considered to be the result of inflammatory action; but until within twenty-four hours of death, there was scarcely a symptom diagnostic of any of these lesions. Up to this period the patient retained perfect possession of all his faculties, mental and physical; there was no delirium, paralysis, convulsion, or contraction of the limbs, which has been regarded by some French pathologists as indicative of cerebral ramollisement. These, with most of the conditions symptomatic of cerebral and meningeal inflammation, were altogether absent. Dr. Abercrombie, in his valuable treatise, has detailed some cases similar in this particular, and represents "the danger of being guided by system in our diagnosis of affections of the brain, and the necessity there still is for extensive and careful observation of facts in regard to this class of diseases."—*Lancet*, April 13th, 1839.

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10. *Red Appearance of the Internal Coat of Arteries.*—Mr. Hodgson read a paper before the Medical Section of the British Association, at their recent meeting at Birmingham, on this subject, in which he stated, that this appearance did not depend on inflammation in every instance, and from which it should be carefully distinguished. It might occur extensively, or in small patches, or in different parts of the same subject, presenting different shades of colour. It was found in subjects of all ages, in healthy as well as morbid coats, in the lining membrane of the heart, and of the veins, but less frequently in the latter. It may be found when blood is present in those cavities after death, or where they are completely empty. Mr. Hodgson related the experiments of Laennec and Andral, which proved that this red appearance might be communicated after death by immersing the vessels in blood. As to the efficient cause, he stated, that it might proceed from imbibition, in the same manner as we find the neighbouring membranes stained with bile from the gall-bladder and its ducts; the first changes towards decomposition and putrefaction might allow of it more readily. Some writers look on it in every instance as the result of inflammation; slight modifications of vitality may permit its occurrence during life, as we find it, where chronic inflammation has existed, giving rise to deposits of an atheromatous matter. When dependent on inflammation it will be found affecting the

inner coat only, but when on other causes it will often pervade the elastic or middle coat as well as the serous. Finally, he stated that it might be found depending on the co-existence of those causes which were capable of producing it singly.

Dr. Macartney thought that it was of importance to discriminate between the red appearances described by Mr. Hodgson and inflammation; they had a painted appearance, were devoid of tumefaction, and were most perfectly distinguished by being insusceptible of injection. There was, he stated, much analogy in the red patches observed on the pharynx and œsophagus in cases of hydrophobia; he remarked that these appearances might not depend on the putrefactive process, but be caused more by changes in the blood itself than in the solids. Dr. Macartney dwelt on the important part played by the effusion of coagulable lymph in the closure of arteries, independent of, and even previous to, inflammation.—*Athenæum.*

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11. *On the Effects of the Human Milk on the Child during Menstruation.*—Mr. E. Wilkinson having frequently observed that human milk has a decidedly laxative effect on the child during the period of menstruation, he is led to conclude that it may not only prove injurious to the offspring at the time, but that it may also frequently be the means of laying the foundation of other infantile diseases. "It is a fact," he observes, "now pretty well ascertained, that whenever the mother's constitution is impaired (or only even slightly influenced) by either mental or physical causes, during the period of lactation, the secretion of milk is changed in quality, and a morbid effect is consequently produced on the constitution of the child from the physical changes it is supposed to have undergone. My attention was particularly directed to the consideration of this subject a short time ago, on observing a child of my own very much laxed from the cause here alluded to, as may be inferred from the subsequent account. On inquiry, I ascertained that not only this child, but also my two other children had been similarly affected whenever the mother menstruated during lactation. The stools which this child had were exactly like those of a sucking calf labouring under diarrhœa, both as regards colour, consistence, and smell. As to the appearance and colour of the stools, they presented that of a liquid mixture of chalk and ipecacuanha. They appeared to consist of a small portion of excrementitious matter dissolved (and as if well triturated) in a large proportion of serous fluid. The fœtor of them was excessive, and almost intolerable, and, as I thought, not dissimilar to that of the menstrual secretion itself. The youngest child had the breast until he was nineteen months old, and the mother menstruated regularly during the last seven months. She also menstruated regularly from the first month after her two first accouchments during the whole period of lactation. M. Donné has ascertained that human milk is a fluid holding in solution lactic sugar, salts, a small quantity of fatty matter, and of caseum; and, in suspension, a number of globules composed of butter, which are of various sizes, and soluble in ether. The first milk, or colostrum, contains, in addition, particular bodies, which M. Donné designates 'granular;' these latter do not disappear entirely before the end of the first month after delivery: they sometimes, however, continue beyond that time. M. Retzius, it would appear, has discovered free phosphoric and lactid acids in the *menstrual blood;* the acids hold the colouring matter in solution. Although I am no great advocate for medical theory and hypothesis, yet it is probable that, according to the recent discoveries of the composition of the human milk by Donné, and of the menstrual blood by Retzius, the former may be deprived of a considerable portion of its nutritive ingredients, and surcharged with saline matter; hence its purgative effect on the child. If this is really the condition of the milk during the menstrual period, it is evident that it will not only produce diarrhœa and nervous irritation, but that it will likewise prove defective in nutriment, and thus it may, indirectly as it were, lay the foundation for various infantile diseases. If, therefore, the precise condition and composition of the lacteal secretion during menstruation could be ascertained, we might then, perhaps, discover the means of

preventing its morbid influence on the constitution of the child, provided it does actually produce such an effect upon it at the period."—*Lancet*, 27th July, 1839.

MATERIA MEDICA AND GENERAL THERAPEUTICS.

12. *On the Mechanical Action of Tartarized Antimony.* By G. Polli.—According to Giacomini the effects produced by the application of tartar-emetic to the skin do not in the least depend on its dynamic action, but on the mechanical action of its minute crystals. Hence the effect of emetic frictions on the economy must be quite different from that produced by the same salt taken internally. In proof of his opinion, Giacomini adduces the sharp angular form of the crystals and alleges that their action is increased by the addition of powdered sugar, that the same result will be produced by any other crystallized salt or even by glass, and that the aqueous solution applied in local baths causes no irritation. But, on the other hand, considering that the cutaneous efflorescence, produced by tartar emetic, invariably presents the same characters, that a similar eruption is frequently developed by sympathy in parts far distant from the seat of friction, such as the scrotum, neighbourhood of the anus, &c., and that pustulation follows when the ointment is simply spread on the skin, M. Polli inclined to the old opinion of its acting dynamically. To settle the question, he and several of his friends made a number of experiments of which the principal results were as follows: 1st. Tartar-emetic friction always produced a papular eruption, with tendency to pass into the pustular form, and in three, a similar affection or pruritus was observed at the genitals or anus. 2d. The eruption never appeared before the thirty-sixth or after the forty-eighth hour after friction. 3d. Simple friction, with cloths dipped in water, when performed where the sebaceous glands are prominent, produced in about half an hour, an eruption of rosy papulæ, without any tendency to become pustular or to suppurate; where the skin was smooth erythema only followed. 4th. The repeated application of local baths, made with a saturated aqueous solution of tartar-emetic, never produced any eruption. 5th. Ointments made with the same proportion of sulphate of potass, or glass, sometimes produced a slight papular eruption about two days after the experiment, but in the majority of cases had no such effect, and in no instance where the skin was smooth. The eruption was always proportional to the violence of the friction.—*Brit. and For. Med. Rev.*, July, 1839, from *Giornalle delle Scienze Med. Chir.* No. 25.

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13. *On the Exhibition of Remedies in the Form of Vapour.* By D. J. Corrigan, M. D.—That inhalation, as a remedial process, may obtain a fair trial, it is requisite,

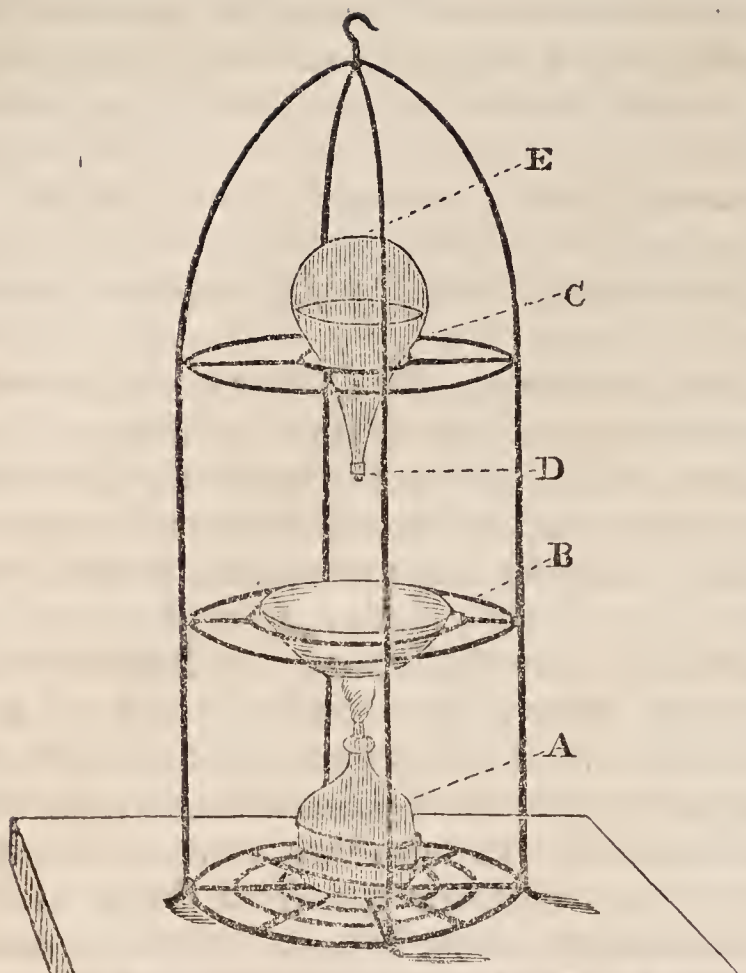
1. That the apparatus should be simple in its construction, and easily kept in order.

2. That it should be capable of keeping up a supply of vapour for any length of time, and that the evolution of the vapour should be steady, and should be easily regulated.

3. That it should also furnish a sufficient supply of aqueous vapour, to prevent any irritation of the larynx or lining membrane of the air-tubes.

4. And most important of all, that its employment should entail neither trouble nor fatigue on the invalid.

I believe all these conditions are fulfilled in the following apparatus (*vide* drawing):—There is a light open iron-wire frame, about eighteen inches in height; at the bottom is a spirit lamp (A). At the proper height above it is an evaporating porcelain dish, about six inches diameter (B). Above this is a glass globe (C) with its neck downwards. In the neck of the globe is a cork (D) bored, and through the opening is drawn, moderately tight, a short plug of cotton wick, such as is used in a spirit-lamp; in the glass globe at (E) opposite



Diffuser for the administration of Iodine, Chlorine, &c. in the form of vapour.

the neck is drilled a pin-hole, to allow air to pass in, according as the fluid within drops out, through the neck. To use it, the porcelain dish is filled with hot water, the spirit-lamp is lighted, and as soon as the water in the dish has begun to boil, the glass globe containing the tincture of iodine (if this be the substance used) is placed as shown in the sketch. The rate at which the fluid in the globe shall percolate the cotton wick, and drop into the hot water underneath, is easily regulated. If it do not drop with sufficient rapidity, one or two of the threads of the cotton are to be removed. If it drop too rapidly, this is corrected by pressing in the cork more tightly, or introducing one or two additional threads of wick.*

This apparatus fulfils, I think, all the conditions required. It is simple in construction, and most easily regulated; there can be no sudden and injurious evolutions of vapour from it, but drop by drop, the evolution gradually and steadily goes on; and the air which the patient is breathing may be maintained in any required degree of impregnation, while the impregnation can be kept up for any length of time. The medicated substance employed is always vapor-

ised with a sufficient quantity of aqueous vapour, to prevent any irritation of the larynx or lining membrane of the air-tubes; and lastly, employment of the apparatus for any duration entails neither trouble nor fatigue on the invalid.

With this apparatus, the impregnation of the air of even a large chamber is so perfect, that the window-curtains are tinged blue by the action of the vapour of iodine. Solution of chlorine, the balsams, turpentine, preparations of camphor, stimulating or sedative remedies may, by this apparatus, be diffused in any quantity through the air which a patient is respiring.

I have mentioned the necessity which exists in most cases, of combining with the process of evaporation a sufficient quantity of aqueous vapour, to prevent any irritation of the larynx, or mucous membrane of the air-tubes. A few observations will show the importance of attending to this. We are all familiar with the injurious effects of a dry easterly wind on irritable lungs, and we are equally cognisant of the beneficial effects which patients, suffering under such, derive from long sea voyages, during which they are inhaling air, which, sweeping over a great extent of sea surface, must come to their lungs, holding in solution a large proportion of aqueous vapour. The following calculation, for which I am indebted to an American physician, whose name I regret I cannot recal to my mind, places the difference between the two kinds of air in a very striking point of view:—

If a man breathes twenty times per minute, and draws in at each respiration forty cubic inches of air, he will require in twenty-four hours 1,152,000 cubic inches of air. The dew point of the human breath is always the same, it is 94° of Farenheit, and 1,152,000 cubic inches of air, the quantity respired in twenty-four hours, contains at 94°, 10,828 grains of water, or aqueous vapour. Suppose now, air, which we are respiring, to be so dry, such as an easterly

* To use chlorine, pour into the glass globe 8 oz. of saturated solution of chloride of lime, and into the water in the porcelain dish 2 oz. of the dilute sulphuric acid of the Pharmacopœia. As the chloride drops, the acid seizes on the lime, and the chlorine is evolved in connection with the aqueous vapour.

wind in this country may be, to contain so little aqueous vapour as to have its due point as low as zero, the same quantity of air will then contain only 518 grains of watery vapor. This dry air, which, when entering the lungs, contains so small a portion of aqueous vapour, leaves them on expiration with its due point at 94°; that is, it now on leaving them contains 10,828 grains of watery vapour. It has, therefore, abstracted the difference between 518 and 10,828, being 10,310 grains (or nearly two pounds weight) of watery vapour from the lining membranes of the lungs in twenty-four hours. To meet such an expenditure of the natural vapour of the air-tubes there is necessarily a constant determination of blood to the vessels of those tubes, and just as the dry air of the desert will, by robbing the parts of their natural moisture, inflame the eye and parch the throat, so will air, destitute of a due proportion of aqueous vapour, produce irritation and injury in the delicate and moist texture of the lungs.

Any lengthened observations on the therapeutic application of the apparatus which I have described, I must reserve for a future time. The period is too short since its construction occurred to me, to permit me to say much as yet of its effects. The use of such an apparatus is principally required in chronic affections of the lungs; and these must be observed, both on a large scale and for a length of time, before we should venture to pronounce an opinion. The only remedial agent I have yet employed with the apparatus, is iodine. Connected with its employment there are some circumstances of which, however, I can even now speak with confidence. The inhalation of iodine has been dreaded, because in some instances troublesome irritation of the larynx has followed its use; this injurious effect has resulted from the defective means of inhalation hitherto employed. Used in the manner I have described, gradual in its evaporation, and intimately combined with a large portion of aqueous vapour, its use is positively (and I can say it with confidence) free from any injurious irritative effects. The vapour of iodine diminishes most remarkably the profuse and wasting purulent expectoration of phthisis. In the case of a man, named Carroll, with whom I have been using the apparatus in Jervis Street Hospital, the purulent expectoration, which had been very profuse, diminished soon after he commenced its use, to three or four sputa in the day; and thus it remained up to the time of his leaving the hospital in January. In this case, also, the constitutional symptoms accompanying phthisis were completely arrested by its employment. The physical signs of phthisis were also less extensive; but they had not disappeared when he passed from under my care. The effects of iodine thus used, on the digestive organs, have been very gratifying. In all the cases in which I employed it, the appetite and state of the intestinal canal have been improved. It has in fact acted as a most useful tonic to the digestive organs, without any of the irritation which its internal use in the ordinary form has often produced. It has also so much alleviated cough, that the patient has been enabled to obtain hours of sound and refreshing sleep. Even should its use prove on trial to be of little avail against the destructive scrofulous ulceration which constitutes phthisis, still the palliative good which is derived from it, renders it a valuable addition to our list of remedies; and if the cure of phthisis is to be effected through the strength of the constitution, it will furnish material assistance as a valuable tonic. I shall now make a few observations on the management of the apparatus where iodine is employed. I have had it at constant work for from eight to twelve hours out of the twenty-four. At night, when the patient is settling to sleep, the apparatus is suspended from the roof of the bed; and once arranged, it continues its work quietly and silently for four or five hours, while the patient, in a composed sleep, is all this time inhaling the medicated air. In the morning, for three or four hours before the patient rises, it is again at work; and if necessary, in the mid-day, while the patient reads at a table, or, what is better, reclines on the bed, with the curtains drawn round three of the sides. The rate of evaporation, which generally gives a sufficiently strong impregnation to the air, is, when the tincture of iodine drops from the cotton wick at the rate

of from six to eight drops per minute. At this rate about six drachms of the tincture will be evaporated in an hour; and as every particle of the iodine is diffused in watery vapour through the air, there are thus diffused in the minutest state of division through the air, in every hour about thirty grains of iodine. If we suppose the patient to inhale only one-twentieth of the iodine evaporated, he will inhale in each hour, and apply to the diseased surfaces, one grain and a half of iodine in a state of the most minute division or solution. This quantity we know is quite sufficient to exert a decided action upon scrofulous ulceration; for we find on reference to Lugol's valuable work on the employment of iodine in scrofula, that in external scrofulous ulceration, the preparation of iodine which is found beneficial, is a solution which contains only about three grains of iodine in each pint of fluid. The duration of the inhalation can of course be extended at pleasure.

I may, in conclusion, observe, that since iodine and other agents exert so powerful a control over diseased secretion, and unhealthy ulcerations of other parts, when locally applied, there is at least a warrant for hoping, that when we have the means of fairly bringing the same agents to act locally, and for a sufficient length of time, upon similar diseased actions in the lungs, we may expect, at least in some instances, similarly gratifying results. The apparatus I have described furnishes us with means of doing this; and I hope at some future time to be able to bring forward a detailed account of the results. I shall esteem myself very fortunate, indeed, if I add ever so little to the means we possess of combating that opprobrium of our art—consumption; and to those, if there be any, who would discourage or reprobate new attempts at cure of this disease, I would say in the words of Beddoes, "When men reprobate new methods, as unjustifiable *experiments*, let them in the name of common sense and humanity, be asked the following simple questions:—Whether any thing can be more unjustifiable, than perseverance in *experiments* of which constant repetition has rendered the failure certain? Whether, in such a disease, any innovation that does not increase pain and shorten life, can be an object of just apprehension? Whether, after failure, there do not remain to him who employs extraordinary measures, just the same resources as to the adversary of improvement? And, whether the innovator is likely to be so stupid as not to know how to draw the utmost advantage from the saline draught, the chalk mixture, the syrup of poppies, the acid of vitriol, and that whole tribe of palliatives, which, between ourselves, gentle reader, an observant nurse may soon learn to administer to nearly as good purpose as the most specious doctor?" —*Dublin Journal, Med. Science*, March, 1839.

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14. *On Narcotine as a substitute for Quinine in Intermittent Fevers.*—By Dr. O'Shaughnessy. On the 4th of August, 1838, at the meeting of the Medical Society of Calcutta, Dr. O'Shaughnessy laid before the society the details of thirty-two cases of remittent and intermittent fevers treated by narcotine as a substitute for quinine, and of which thirty-one were cured. The cases previously described in the first report of the Pharmacopœia committee were twenty-seven, making in the whole sixty, of which the narcotine was successful in all but two.

The cases now communicated were as follows:

Two cases by Dr. Goodeve. One of them, the case of the late deputy-collector of Chittagong. Quotidian of several months' standing, spleen enlarged. Quinine was used without success, although given in every possible form. Arsenic was then tried, and checked the fever, but did much mischief to the patient's general health. Narcotine was then given, and with such success, that Dr. Goodeve concludes it thus: "I do not hesitate in saying that this patient owes his life to the remedy in question." The other case was a patient labouring under inflammation of the bowels at the same time, where the administration of quinine would have been inadmissible.

Three cases are reported by Dr. Smith, of Hidgelee, who adds, "As far as these three cases go, I cannot speak too favourably of narcotine and am very

desirous of trying it more extensively." Capt. Marshall, of Calcutta, communicated three cases of severe ague occurring among his servants; all were rapidly cured, and captain Marshall says, "It would be presumptuous in me to offer any opinion as to the virtues of narcotine; all I can say is, that if ever I am ill of fever I shall unhesitatingly and confidently prefer it to sulphate of quinine or any other medicine I know of."

Mr. R. O'Shaughnessy described the case of a man on whom he had operated for stone, and who was attacked by violent ague on the day of the operation. The ague returned next day at the same hour. Mr. O'Shaughnessy considered it unsafe to employ quinine under these circumstances, and had recourse to narcotine. Four doses of this medicine were given, and Mr. O'Shaughnessy states, "The fever did not return, the wound was not in the slightest degree affected; there was no excitement or headach produced. After he took the first dose he slept soundly, which he had not done the two previous nights, and he was discharged cured of the effects of the operation on the fourteenth day after its performance."

Mr. O'Brien, the apothecary of the native hospital, reported three cases. Mr. Evans one, the Pundit Modoosoodona Gupta one, all successfully treated. The pundit's patient laboured under dysentery at the same time.

Dr. J. Chapman, assistant-surgeon of the Calcutta General Hospital, related the case of a European who contracted violent remittent fever at Kedgeree on the 16th of July, and was received in hospital on the 19th. Quinine was used in the usual manner on the first remission on the 20th, and again on the 21st, but the symptoms were rather aggravated than improved. The narcotine was then given, and its use was speedily followed by a complete remission. From that time the fever did not return, with the exception of restlessness and slight headach on the evening of the 23d. On the 28th, all medicines were omitted, the patient was discharged convalescent.

Dr. O'Shaughnessy further submitted two cases, treated in his own house among his servants, both of which were cured. Lastly, he communicated fifteen cases extracted from the journals of the Medical College Hospital. In five of these cases quinine and arsenic had failed, in eleven there was enlargement of the spleen or liver, in one inflammation of the knee-joint. Seven of these cases were remittents, and two of these had died. Of the two fatal cases one was admitted on the seventh day of violent fever and died the next day. In the second (a child) the spleen, liver, pancreas, and mesenteric gland, were immensely enlarged, and the case hopeless from the beginning.

Dr. O'Shaughnessy added that, besides the sixty cases now recorded, more than 100 ague patients had been treated by his pupils and acquaintance with perfect success by this remedy.

[In a subsequent number of the India Journal, the following letter appears, addressed to Dr. O'Shaughnessy, by Mr. Green, *Civil Surgeon, Howrah.*]

"I have now employed the narcotine in sixteen cases of remittent fever, and such is my opinion of the efficacy of the remedy, that in instances of fever, intermittents and remittents, in ordinary healthy subjects, and in whom there is no complication of severe organic disease, I give it with the full expectation of arresting the next periodic return of the fever. I have seen the result follow in ten of the cases of the fever alluded to. I consider narcotine a more powerful antiperiodic than quinine. The remedy does not act silently. I have observed a degree of general heat follow its use in the first instance, and, subsequently, perspiration, so that it appears to excite in the system a salutary and powerful counteraction as to stop the morbid concentration that issues in fever. I have not observed narcotine to lead to local organic disturbance in the cases in which I have used it. In short, even from my scanty experience, I consider the remedy an invaluable one."—*Brit. and For. Med. Rev.* from *India Journ. Med. Sci.* Sept. and Nov. 1838.

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15. *On the Therapeutic Effects of Alcohol and its Combinations.* By G. G. Sigmond, M. D.—Alcohol and its combinations have great and important actions

on the animal economy. They are tonics, they are diffusible stimuli, they are anti-spasmodic, and are stomachic.

There are few subjects which demand greater practical knowledge than the proper administration of any of the diffusible stimuli during the progress of fever; the older physicians were reluctant to give wine, and, though occasionally recommended, it was considered highly necessary to point out that nothing but the most urgent danger could justify its use. About the termination, however, of the last century, an individual of eccentric mind and manners, who had been the assistant of the illustrious nosologist, Cullen, in his valuable labours, produced a new doctrine, which, from his name Brown, was called the Brunonian system, and which, for a considerable length of time, swayed the practice of many most intelligent persons. His idea, that a vast proportion of the diseases to which the human frame is subject, are dependent upon debility, led to the employment of the diffusible stimuli in a vast number of diseases in which they had been previously considered inadmissible. After all, the theory of fever, as elucidated by one of the followers of Brown, the ingenious Dr. Darwin, was quite as good as the mechanic theory of Boerhaave, the spasm of extreme vessels of Hoffmann and of Cullen, and the putridity of Pringle; it is, however, somewhat difficult to be explained by any one but himself; he, however, recommends wine in fever, on the impression that, as fever depends upon a want of sensorial power in the brain, the secretion may be increased of that sensorial power by opium, or wine, because, as he observes, when taken in certain quantities, an immediate increase of strength and activity succeed for a time, with consequent debility, if the quantity taken be so great as to intoxicate. Certainly, during the development of those symptoms, which, from their intensity, prognosticate death, and to which the name of typhoid is given, the internal use of wine, or of diluted spirit, may very properly be permitted; but, nevertheless, it must at all times be watched with due anxiety and attention, for the brain cannot bear the excitement produced; and the moment its action ceases, the consequent reaction comes on, and, too frequently, with greatly increased energy, so that the powers of life are rapidly exhausted.

It is a very unfortunate mistake to imagine that, because the muscular energy is exhausted during a long continued fever, and that the debility is very great, that stimuli are required, and that wine and cordials must, therefore, freely be administered. In one of Mr. Lawrence's lectures, you will find an observation made by him, as to the consumption of wine in the Fever Hospital of the metropolis. He states that he had the curiosity to ask Dr. Tweedie how much port wine they used in the course of the year in the Fever Hospital, and they take a great many cases there in the state called typhus; they receive a great many cases in which that state exists in its worst form. Dr. Tweedie told him that the consumption of wine, he believed, did not exceed two or three dozen bottles per annum; so that their experience there has not led them to place great dependence on it. Patients and their friends are generally much too eager for the employment of wine, or of some of what they imagine to be cordials; they are not aware that in the state of debility, a very small quantity becomes an inordinate dose; that the apparent exhaustion is more readily cured by natural sleep than by any of the active remedies. During the termination of fever, after the danger had ceased, the most favourable symptom is that of sleep, during which the body acquires more strength and more nutrition than could be obtained by the most stimulating agents.

Surgeons, more especially in active military practice, formerly gave wine to support the strength after severe wounds; and on the field this is a most admirable practice, but not after the unfortunate sufferer has been for any time in the hospital. No medical man, when serving with the army, should omit to carry with him a canteen of good wine, or spirits diluted. As Hennen, in his "Military Surgery," has remarked, many men sink beyond recovery for want of a timely cordial before, during, and after operations; and many of the primary operations would be rendered much more favourable in their results by the administration of a single glass of wine. While elsewhere he remarks:—

"restriction in the use of wine is one of the most difficult to effect in military hospitals, but is one that calls most loudly for attention. The idea is absolutely erroneous, that a large quantity of this cordial is necessary in the advanced stages of fractures and wounds." In hospital gangrene, a liberal allowance of the best wine that can be procured is necessary, where there is no inflammatory diathesis present.

Wine is a most valuable medicine in erysipelas; but, again, the greatest judgment must be exercised before you venture to prescribe it, and the state of the pulse must be the great indication of the measures which you are to pursue in the treatment of a formidable disease, which affects individuals of such different constitutions. This is one of those maladies in which a medical man must have great knowledge of the science, for be assured no one mode of treatment is adapted to all cases, or to all climates.

My valued preceptor, the late Dr. George Pearson, often mentioned in his lectures the surprise he felt, on his first settling in London, to find that erysipelas was cured by bark and wine here, whilst he had been in the habit of seeing the most practical men of Edinburgh successfully treat it with venesection. He wrote to his friend Dr. Duncan, the learned Professor in that University, stating the fact, and it was some time before he was fully satisfied that he was following the right path, more particularly as he found his friend in the North still pursuing, with the best results, the other plan. It very often happens that a combination of the modes of treatment is necessary, the antiphlogistic being the first stage; the puncturing, as originally recommended by Dr. Dodson, of Greenwich Hospital, the use of the nitrate of silver, as I have before pointed out, and, towards the end of the disease, bark and wine. frequently are necessary. The moment you find what Abernethy called a shabby pulse, you must freely give wine, and you must keep up the action, not allow the system to fall below a certain point; every eight hours sometimes is too long to wait, though that is the time generally spoken of; a small quantity may be given at each time, but that should be very frequently, so that a large proportion be taken in the course of the day. There is one hint I would give you—where there is a hired nurse of worthless character, that oftentimes a good deal of wine is consumed, but the patient has not the benefit of it.

Dr. Marcet, physician to Guy's Hospital, determined to try which plan of treatment of erysipelas would be most successful, the antiphlogistic or the cordial system. He placed two individuals labouring under a disease which bore very similar characters, close to each other; to the one he gave tonics, generous diet, wine, and the stimulating medicines; to the other salines and low diet, and blood was also abstracted from the arm; both these persons recovered, but the one who had been treated with the wine and the tonics recovered very rapidly, whilst the other lingered for a very considerable length of time in a very debilitated state.

Abernethy has observed, that where erysipelas attacks the lower orders of this town, who weaken their constitutions by the excessive use of ardent spirits, gin may sometimes be advantageously employed as a remedy, being at once the evil and its cure. He stated that he saw in the hospital two cases of this disease, which proved the truth of his remarks. A man had erysipelas very severely; his head was swollen to an enormous size, and his recovery by every person thought impossible; it was discovered one day that his wife brought him some gin. He declared that he was better from having drank it, was consequently permitted its continuance, and to the astonishment of all, he got rapidly well. Not six weeks after this, there was another man similarly circumstanced brought into the same ward, and having, from the result of the case just mentioned, formed a high opinion of gin, the eccentric surgeon directed the sister to give it in this case also, and this patient recovered as speedily as the former. He was in the habit of speaking very highly of a port-wine poultice in sloughing sores and in gangrenous sores, where the gangrene was much disposed to spread. In one of his lectures, he mentions the case of a girl in the hospital who had a gangrenous sore in the pudendum, to which a great variety of applications had

been made without any beneficial result, at last a port-wine poultice was applied, and with such immediate good effect that, although he had before despaired of her life, the sores were quickly brought into a healthy state.

"In whatever disease you may administer wine or the alcoholic fluid generally, you should always be careful as to the state of the skin; if it be hot and dry, you must not attempt to give it, but when the heat is about the natural standard, that is, about 98° Fahrenheit, you may almost invariably give it with safety, and, if the nature of the disorder really demand it, with advantage. Dr. Currie has very justly observed in his excellent work on the effects of water, cold and warm, as a remedy in fever and other diseases, when the mind is vacant, the stomach empty, and external impressions excluded, alcohol, like opium, has a tendency to induce sleep; as sleep, however, approaches, the heat of the body rises, especially on the surface and extremities, and stimulating the heart and arteries to increased action, produces a state of agitation with which sleep is often incompatible; hence the administration of alcohol in fever requires the same precaution as that of opium.

"The general opinions in favour of wine, and the rules to be observed in fevers, intermittent, continued, and nervous, are to be found in Huxham's work on fever, in Cullen's Materia Medica, Pringle, Fordyce, Blane, and Monro, all of which contain some useful remarks; nor must I forget to recommend to your perusal the work of Dr. Trotter, to whose memory I think the Temperance Society is in justice bound to raise a monument, for no one ever pointed out the evils which result from the alcoholic liquors more forcibly, nor is there any writer in the medical profession who has produced a greater sensation upon this subject than he did; and although such distinguished men as Dr. Parry and Dr. Lambe have also given us their opinions, yet the authority of Dr. Trotter has been quoted as the legitimate opponent of the fermented liquids, in every shape and form in which they can be offered to man."—*Lancet*, April 28, 1838.

16. *Medical Properties of Nitrate of Silver.* By G. G. Sigmond, M.D.—The nitric solution of silver has some very striking properties; it is excessively caustic; it has the power of rendering the skin, at first, of a very odd kind of purple, after which it becomes black; and this virtue is not confined to the skin, but to the greater number of animal substances, to which it is for any length of time applied; the nails and the hair both are liable to become tinged by it. In fact, some persons have availed themselves of this property to make dyes for gray hair and for gray eyebrows; and some lotions have been highly patronised on account of their power of giving the appearance of youth to those whose gray hairs would tell the truth. A great inconvenience has, however, been felt from the liability of the hair to become blue befores it acquires the black colour, and many attempts have been unsuccessfully made to obviate this; besides which, if too great a quantity be employed, the hair is likely to be softened, disorganised, and decomposed, and many an individual, anxious to be an Adonis, has lost the venerable appearance of gray hair, and acquired a dirty black hue of the skin, and a tendency to constant headache, from a want of due attention and prudence in the use of nitrate of silver.

An accidental circumstance, which is related in one of the volumes of the "Medical Transactions," is said to have led the way to the employment of nitrate of silver for the cure of epilepsy, in which disease, where properly administered, and under careful regulations, it is found to be highly serviceable. A gentleman, about forty-six years of age, who had from his infancy been subject to epileptic fits, and who was in the habit of introducing a crown-piece between his teeth to prevent the tongue from being bitten, accidentally received it in the œsophagus, from whence it was artificially passed into the stomach, as it was situated so low in the œsophagus that it could not be forced back again. The throat after this was inflamed, very painful, and for a long time attended with the utmost difficulty of swallowing. The patient's general health after this was much as usual, but his fits were observed to be not so violent or frequent as before. About nine months after the accident, he brought up the crown-piece

with vomiting, but without pain; from that time he enjoyed a perfect state of health, and he had no return of his epileptic fits. The crown-piece appeared black, and somewhat corroded round one part of the edge and surface.

Nitrate of silver is particularly useful in epilepsy of very long standing, and will very often prove most efficacious after all other remedies have ceased to produce any influence. Many persons for a long time hesitated to employ this remedy, although Dr. Sims, Dr. Cappe, Dr. Wilson, Dr. Powel, Dr. Baillie, and others, highly recommended it, for fear that as it possessed such highly caustic powers, it might be injurious to the stomach; and, indeed, M. Georget, a French physician, pronounced it to be a dangerous medicine. The only grounds on which he founded his opinion of its deleterious power was, that he found very great and striking marks of disease in the stomach of a woman who had died in the Saltpêrière, after having taken it for eighteen months previous to her admission into the hospital. This remedy may, however, be taken into the human stomach in large quantities with perfect safety, in doses of one or two grains, and this may be repeated three times in the course of each day. It is to be remembered, that the stomach will bear at least three times as much of this medicine in pills as it will in solution; and we are indebted to Dr. Powel for this observation. We learn from the "Medical Transanctions," that when he began to give the nitrate of silver for epilepsy, he administered it in the form of pills, but he feared to proceed farther than with doses of a single grain, in the solid state, lest he might produce mischief, and that it might act as a caustic in a concentrated form, he, therefore, prescribed it dissolved in aqua menthæ viridis, which best covers its nauseous taste, and which would, also, enable him better to graduate his dose, and allow him to increase or diminish it accordingly, as circumstances might arise; but he found that in some instances he could give the quantity of fifteen grains, in the form of pill, when the stomach would not bear more than five grains in solution. The safest plan is to make it into grain-pills, with crumb of bread, to which a little sugar should be added, to prevent the mass from becoming hard, and a single grain is the dose that should be commenced with, in preference to a smaller quantity; the frequent practice of giving only an eighth, or a quarter of a grain, is to be avoided. The small quantity is generally very inefficacious, besides which the stomach becomes habituated to it, before any marked impression is made. You will generally find that in the successful cases, in different writers, the dose has been at once a grain, which has been occasionally increased to six grains, three times a day, and this has been persevered in with the best results. In cases of dyspepsia, arising from loss of muscular power of the stomach, the nitrate of silver has been very strongly recommended, and the authority of Dr. James Johnson is quoted in its favour.

The great objection that is to be raised to the use of nitrate of silver is, its becoming deposited in the rete mucosum, and giving a permanent dark colour to the skin of the patient on exposure to light. Dr. Albers, of Bremen, was the first who noticed this fact, which has been corroborated by subsequent experience, although it does not take place in every instance. The tongue and fauces become first bluish, and then gradually grow darker, till they appear quite black. The blue colour generally spreads all over the body, but is most intense in the face, and, in the female, the neck and those parts exposed to the action of the air and of light. Albers gives us an instance of this kind in a female thirty years of age, whose whole skin became black, mostly so on the face, the forepart of the neck, as far as the bosom, and the hands and nails. Whenever she held her arms in an erect posture, the blue colour was diminished, and even disappeared almost entirely. The tunica sclerotica was likewise much coloured. Dr. Wedemeyer, of Hanover, had a patient under his care, who, after the use of the nitrate of silver for eighteen months, became of a black colour. She got rid of her epilepsy, but at a subsequent period died of diseased liver, accompanied by anasarca. On examination of her body, the plexus choroides was of a dark blue colour, and some of the viscera having been submitted to a chemical analysis, were found to contain a considerable quantity of silver.

Dr. Roget, in the "Medical and Chirurgical Transactions," has narrated the case of a young lady who used this remedy in the form of pills, beginning with a dose of a grain, gradually increasing it till at last the quantity taken in twenty-four hours amounted to eighteen grains. In this quantity the medicine was continued, with occasional intermissions of ten days or a fortnight, for four or five months, and then, the disease becoming less violent, and at length altogether ceasing, was gradually left off by a diminution of the dose. Her general health improved under this treatment, and she was relieved from a variety of nervous affections, to which she had previously been subject. Some time after the remedy had been completely discontinued, she remarked that her tongue and fauces had acquired a very dark colour, as if stained with ink. This for a time increased, and afterwards somewhat diminished, but a considerable degree of blackness in those parts remained permanently fixed. About a year and a half after she began to take the nitrate of silver, and several months after she had entirely left it off, it was observed that the complexion was growing dark; this was first noticed about the eyes, but not particularly about the lips. This change gradually proceeded without any perceptible derangement of health, affecting equally the skin over the whole of the body. It attained its maximum in the course of a year, and at the end of six years, when the narrative appeared before the profession, it continued with nearly equal intensity. Dr. Vetch communicated to Dr. Cooke an account of an instance of the discolouration of the skin produced by nitrate of silver, which is in some respects singular and curious, and this he has related in his very interesting "Treatise on Nervous Diseases," in which you will find a great deal of valuable information upon the therapeutic agents in epilepsy. Dr. Vetch had a lady under his care, who became, after a loug continuance of this remedy, discoloured in the upper part of the body, whilst the colour of the lower part remained unaltered, and in both eyes the iris, which was naturally of a black or deep brown, was changed to a light blue. It not unfrequently happens, and you should be aware of the fact, that in many instances the skin does not become discoloured until several months have elapsed, after the remedy has been entirely discontinued, and its effects have become visible upon the constitution, as relieving or curing the disease for which it was originally prescribed; hence, great caution is necessary in watching the slightest change in the appearance of the tongue and fauces.

Mr. Higginbotham, of Nottingham, has recommended the treatment of erysipelas by nitrate of silver; by making a line of demarcation around the diseased surface, the action is prevented from spreading; but this remedy need not be confined to bounding in the inflammation, but it may be immediately applied to the inflamed part without any fear of producing mischief; and this practice is now pretty generally pursued with very good results. In circumscribing the erysipelas, care must be taken that a circle be drawn all around the portion of the diseased skin; if there be a breach of continuity it may cause the disease to spread. Mr. Higginbotham, in his first edition, called this remedy, as had previously been done, lunar caustic; but in his second edition, he substitutes the term nitrate of silver, under an idea that the word caustic conveyed a false impression. In his preface he says: "I would correct a prevailing error in regard to the action of the nitrate of silver; it has been termed a caustic; this is altogether erroneous, it is the very reverse of a caustic. It is impossible to destroy any but the most superficial parts by the nitrate of silver; in this it differs widely from some other substances to which the name has been applied; I speak of it in its solid form." Instead of destroying, it frequently preserves parts which would inevitably slough but for the preservative powers of this remedy. He has given some cases of recent burns, in which the nitrate of silver was successfully used; on slightly passing the nitrate once over a burnt surface the pain is increased for a short time, but then totally subsides, vesication appearing to be prevented, the black cuticle peels off in a few days, leaving the part well. He recommends this remedy as a substitute for blisters, and thinks that it may supersede the use of the blistering fly.

Dr. Jewel, in the year 1829, published a paper in the "Medical and Physical Journal" on the use of nitrate of silver in leucorrhœa, and in the following year he gave to the profession a useful volume, entitled "Practical Observations on Leucorrhœa, Fluor Albus, or Weakness; with Cases illustrative of a New Mode of Treatment;" in this he strongly recommends the nitrate of silver, whether the disease proceeds from morbid sensibility, from congestion, or from irritation of the parts. He has, up to this period, persevered in the use of this remedy as an injection, and I have learnt from him that he still places the firmest reliance in its powers where no inflammatory action is going forward. The mode of applying it is, either to conceal the caustic in a silver tube on the same principle of its application to strictures, or to use the solution of the nitrate in the proportion of three grains to the ounce of water, gradually increasing the strength; a bit of sponge firmly tied to a piece of whalebone moistened with this solution, is to be carefully introduced into the vagina up to the os uteri. As the pewter syringe, when employed where an injection is to be made, becomes decomposed by the action of the solution of nitrate of silver, Dr. Jewel has recommended a bone syringe, which has been made under his direction, and which is known under his name amongst the vendors of syringes, which is a much more serviceable instrument than the one that is in common use. The pathological view which he has taken of leucorrhœa has led him to the opinion that it is for the most part a disease of increased action, and not one of debility or relaxation, and under such circumstances he felt the propriety of employing this remedy; and he observes that he has scarcely ever found a strong solution to occasion much uneasiness or pain, certainly not more than is occasionally experienced during the use of the common astringents. He has likewise employed it with very great success in ulcerations of the cervix uteri; in such cases it is applied by the assistance of the speculum.

A strong solution of nitrate of silver has been employed by many surgeons during the first stage of gonorrhœa, and it has cured it almost instantaneously. An injection of ten or twelve grains to the ounce of water has been thus recommended; great pain is the immediate consequence, but the discharge has been altogether suppressed. Mr. Carmichael drew the attention of the profession to this subject, in his "Treatise on Venereal Disease," but he very judiciously remarks, that the practice is attended with considerable risk of exciting severe inflammation of the entire urethra and bladder, and all the immediate as well as secondary train of evils attendant upon this calamity, that I have no hesitation in saying, that it is a practice that cannot be too strongly deprecated. It has since been, however, recommended, in one of the periodicals, by a surgeon, who gave two instances of its success, and one of the failure of the injection in gleet. The valuable lectures of Dr. Wallace contain some very interesting remarks on the application of the nitrate of silver to the primary syphilitic ulcer; when the use of mercury is combined with this treatment, this latter drug has a tendency to retard the action of reparation excited by the caustic; hence an employment of the two, although circumstances may call for it, is rarely beneficial.—*Lancet*, March 31, 1838.

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17. *On Emetics.* By G. G. Sigmond, M. D.—Emetics deservedly hold a very high station among our therapeutic agents, and have been from an early period employed in medicine; they may be useful either by the nausea they produce, or by the relief which they give to an overloaded stomach. The different states that follow upon their administration are characterised by peculiar symptoms. In the first, or nauseating stage, all the actions by which life is carried on are less energetically performed, and the functions of the different organs are visibly diminished in power. The circulation is less active, the pulse is slow, oppressed, and contracted; the capillary vessels are scarcely injected, so that the face assumes either a deadly cast, or a blue appearance, cold clammy sweats burst forth, the eyes lose their lustre, the lips their natural hue; rigors supervene, the nervous energy is controlled, the highest courage broken down, for both the corporeal and mental powers become momentarily enfeebled, and life ceases to

be a source of desire; this nauseated state may be kept up for days and for weeks in individuals of peculiar susceptibility, during which death in not unfrequently prayed for, as a release from the suffering, but as soon as vomiting occurs, an alteration takes place, which may either be momentary or permanent; the whole system is roused into action, and every organ is relieved.

The ineffectual efforts to vomit, which are known by the name of retching, are both distressing and dangerous, and, therefore, demand every assistance that can be given. Some persons who would quickly be destroyed by the train of miserable sensations that are consequent upon nausea, are very much relieved by complete evacuation of the stomach. There are some diseases, however, in which keeping up for some time this nausea is necessary; and although the means of cure are almost as dreadful to bear, as are the complaints that are made, they must be endured with patience and with submission. The deadly nausea kept up by ipecacuanha, or antimony, will sometimes diminish inflammation which would not yield to remedies apparently more active. Thus, occasionally inordinate action in the lungs, or active disease of the eye, is more advantageously controlled by these remedies than by any other; the fluid in abscesses has been rapidly absorbed; diseases of the skin alleviated and cured, purulent ophthalmia has been checked; dropsical effusions dispelled; inflammation of the substance of the brain and its investing membranes, has yielded to such treatment, and more particularly if the nausea be mechanically produced, instead of by introducing into the stomach the remedial agent. The worst states of disordered functions of the brain have received their cure from the keeping up in the stomach a constant nausea, by obliging the sufferer to submit to unwonted motion, either by swinging, by being obliged to ride or to run within the limits of a very small circle.

It is singular to observe the idiosyncrasies of different individuals with regard to the production of this feeling; with some the riding in the carriage, the movement of any glittering object before their eyes, peculiar sounds will cause it. Sympathy, or association of ideas, will most strikingly influence this action, even in the strongest frame; but the power of the will sometimes counteracts the effects, and a determination to exhibit self-command has been known completely to control the sickness even under very trying circumstancces.

Those substances only are defined emetics which act by their own innate power, and which do not cause the evacuation of the stomach, either by their great bulk, their nauseating taste, their fetid odour, which do not injure the power of the stomach, nor leave behind them any deleterious effect; otherwise a vast number of mineral and vegetable bodies would be enumerated in this class which the stomach rejects from the vis insita which teaches it that the substance would, if allowed to traverse the circulation, put a stop to the great principle of life. It would appear from some instances, though they certainly are very rare, that individuals have possessed the power of causing the food swallowed to regurgitate without any inconvenience to themselves, and hence to have assimilated to that class of animals which are called ruminants, from their voluntarily throwing back the food they have already swallowed into the mouth, for the purpose of undergoing a second mastication. This chewing the cud, as it is termed, is natural to grazing quadrupeds possessing many receptacles, to which the name of stomach is applied.

The best narrative of one of these cases in the human subject is to be found in one of the volumes of the "Philosophical Transactions;" and Dr. Small, the narrator of the phenomena which were exhibited, cites several instances.

The circumstances are various under which the stomach relieves itself, but neither do simple distension, from over-feeding and gluttony, nor acrid substances, necessarily induce this inverted action; life is sometimes suddenly terminated by apoplexy, or by simple distension, without any effort of the organ to unload itself; thus we learn from Sir Everard Home, that a child left by the nurse close to an apple pie, actually eat so enormous a quantity as to fall dead in a few minutes. Upon a close examination after death, no remarkable appear-

ances presented themselves, with the exception that the stomach was enormously distended by the pie.

Another instance of this kind is quoted by Wildberg, as it became the subject of a medico-legal inquiry. A very corpulent person, after eating a very hearty dinner, suddenly died; it was well known he did not live happily with his wife, and therefore suspicion was excited that she had attempted to rid herself of him by poison. The account that his wife gave of his death was, that no sooner had he despatched his dinner than he dropped off into a sleep, from which, before many minutes had elapsed, he suddenly woke up, called out for fresh air, exclaimed that he was dying, and before the physician who was summoned could reach him, he was actually dead. Upon the examination Wildberg found the stomach so enormously distended with ham, pickles, and cabbage-soup, that when the abdomen was first laid open nothing was at first visible but this swollen stomach and the distended colon. At first some observation was excited by the discovery of a whitish powder, deposited in the folds of the stomach, and it was suspected that it would prove to be arsenic, but upon analysis it turned out to be magnesia, which he was in the frequent habit of taking; the pressure of the contents of the abdomen had pushed the diaphragm high up into the cavity of the chest; the brain, which was carefully examined, exhibited no traces of any alteration of structure, nor of any particular congestion.

Rupture of the stomach is more likely to occur, but even this is an unusual circumstance; it has, however, been known to follow both upon distension and upon ineffectual efforts to vomit. Lallemand, in his "Inaugural Dissertation," relates a very remarkable instance. A female, who had just recovered from a long attack of dyspepsia, was foolish enough to attempt to make up for her long restriction in diet by taking an inordinate quantity of food. In a very short time she was seized with a sense of oppression and weight in the stomach; there was nausea, with fruitless attempts to vomit. She suddenly uttered a piercing shriek, exclaimed that she felt her stomach tearing open; she then ceased to make any effort to vomit, became insensible, and died in the course of the night. There was found in the stomach a laceration five inches long, and a great deal of half-digested food had escaped into the cavity of the abdomen. In this case the pylorus was found indurated, which had doubtless been the cause of the dyspepsia, and may likewise account for the stomach being unable to pass the food into the duodenum.

Where full vomiting takes place without any particular unusual sensation, and where the nausea has not been of a distressing nature, great relief is experienced in very many states of morbid function, and it not unfrequently occurs that a complete evacuation of the stomach, such as that which occurs during a protracted sea voyage, rather promotes the general health than leaves behind any mischievous effect; for a complete ablution, as Cullen has called it, of the plicæ, or folds of the stomach, is its consequence, with a removal of the mucus or sordes that may have long been collected, and served almost as a mechanical impediment to the proper digestion of the food, its conversion into alimentary matter, and its regular discharge into the intestinal canal, the influence extending far beyond the stomach itself, for those important viscera which aid by their secretions the assimilating organs, the liver and the pancreas, are called into action; and with the inverted motion of the stomach the intestines sympathise; they likewise associate their action, and they pour forth from the surface nearest to the stomach their contents, whether they be half-digested food, bile, pancreatic juice, or mucus. At one period it was supposed to be a criterion of the due effect of the emetic when there was a tinge of biliary colouring matter in that which was ejected, or if a taste of great acridity pervaded the mouth and fauces. Some emetics distress individuals more than others, and probably ipecacuan is the one, of all others, best adapted for general use; for, though the preparations of antimony are very valuable to us, and more particularly as they very frequently act as well upon the bowels and produce copious evacuations, they are very apt to lower the general tone of the system, to produce much nausea and depressing sensations; and this occurs more particularly in young children, in

whom sometimes great distress is produced and long kept up by these salts. There is considerable attention necessary in fixing the dose of each emetic, observing the time at which it is best administered, and the particular state of the pulse, the secretions, and the skin. A small or medium dose of some of the emetics is to be avoided, for the result is great nausea, with ineffectual efforts to vomit; while an inordinate dose greatly disturbs the stomach, and leaves it in a dyspeptic state; but, of the two, the small dose is most mischievous, for in this case the whole system suffers, whilst, where the great quantity has been given, the organ itself is only affected, and although there will always be a great sympathy between it and the whole frame, still it recovers itself more rapidly, and is soon brought back to its former condition.

The operation frequently takes place some time after the emetic has been taken, ten minutes or a quarter of an hour generally elapse. Although we possess some drugs which instantaneously produce this effect, still we are seldom desirous that they should be employed, for the more gradual influence is much more useful in the cure of disease. The stomach, in most instances, ought to be allowed to act upon the substance, and by its own chemical power to divest the emetic of such extraneous matter as may be devoid of any active agency; hence ipecacuan is preferred to the emetic principle it contains. Disease has very considerable influence upon the power of each of these agents, independent of idiosyncrasies which lay individuals more open to the rapid discharge of the stomach. Thus, we generally find that in diseases attended with much fever, vomiting is easily excited; in almost all the exanthematous diseases this is very strongly marked: in persons labouring under small-pox more especially, and small doses only are necessary. On the other hand, in diseases of the brain and of the nervous system, attended with spasm, the difficulty of obtaining this end is very great. In mania, in melancholia, in hypochondriasis, we notice it, and likewise occasionally in epilepsy, in chorea, in tetanus, and in hydrophobia; and in these cases though the deadliest nausea is produced by tobacco, the vomiting does not occur to give relief. It occurs often where you have no immediate necessity of giving the emetic, that you may delay it until the following morning, and greatly increase its effect by the administration of a narcotic on the patient's retiring to rest. When the vomiting has commenced it is right to assist the stomach by diluents which have some slight bitterness if possible; hence camomile infusion is so generally used, and the slight tonic effect that is left behind is of service; by such means a general washing out of the viscus takes place, and no remains of the drug employed are left behind to keep up that state of irritation which is the consequence of the want of this proper precaution.

The secondary operation is very serviceable, for the system is gently excited, the perspiration promoted, and inclination to sleep comes on, which, if indulged in, is found to be very refreshing, and from which the individual generally awakens relieved from those impressions from which he has been suffering. That there are many states in which they are very prejudicial there can be no doubt, and that they are doubtful in others, but, upon the whole, they may be considered amongst the most useful of the instruments which have been placed in our hands, and I shall, as I bring each of them before your consideration, dilate upon the advantages we have obtained from its use. I shall not enter upon the theories that have been advanced to account for their operation, for each person has his own, and none are perfectly satisfactory. That the action of emetics is intimately connected with the brain, our knowledge of a vast number of facts has shown to us, and there may be circumstances under which the stomach is a mere passive organ, but this is not universal; that a retarded circulation produces it intoxication shows, and hence bleeding will often prepare the stomach; but I think we must rather feel that it is not one set of causes that invert the usual action, but that there are many. Magendie, Darwin, Boerhaave, and many others, have attempted to explain the phenomena that we witness, but to them I prefer referring you rather than to attempt to elucidate their views, or to offer my own.—*Lancet*, May 12, 1838.

18. *Ergot of Rye in Paralysis.*—It is probable that this remedy acts more especially on the lower or lumbar portion of the spinal marrow. In this way we can account for its utility in stimulating not only the uterus, but also the abdominal and other auxiliary detrusive muscles in expelling the fœtus, when labour-pains are tardy and weak.

It has been used, and with advantage, in certain cases of paraplegia; but it is quite impotent in hemiplegia.

M. Petrequin alludes to a case of paraplegia following a severe contusion of the back, in which the ergot appeared to effect a cure, after moxas, blisters, and a variety of internal remedies had been tried in vain.

The effects of the medicine are similar to those of strychnine; the patient usually experiencing a sense of pricking and formication in the palsied parts. The dose is at first from six to eight grains, to be gradually increased to two scruples or upwards.

An occasional turpentine enema may be advantageously used at the same time. M. Petrequin reminds his readers of the necessity of precaution in continuing the use of the ergot for a length of time. To obviate its *septic* tendency in certain constitutions, the patient should be kept on a nourishing animal diet.

M. Ducros observed gangrene of the heel in more than one case, where the ergot had been administered without due attention to the diet.

It may be proper to observe that the ergot requires to be kept in a well-stopped phial, and should be reduced to powder only at the time it is to be used.—*Medico-Chirurgical Review.*

SPECIAL PATHOLOGY AND SPECIAL THERAPEUTICS.

19. *Albumen as a cure for Dysentery.*—The blood in chlorosis is deficient in iron, and this affection is cured by the administration of preparations of that metal. Dr. Mondiere was induced to believe, from the consideration of this fact that dysentery might in like manner be cured by furnishing to the blood the albuminous principles which are thrown off in such large quantities in this disease. The first case in which he tried this remedy was eminently successful. The patient had been under treatment for dysentery for several days without being benefitted, but in a few days after he commenced the use of albumen, he was restored to health. Shortly after this, dysentery prevailing as an epidemic gave Dr. Mondiére ample opportunities of establishing the curative powers of albumen; many cases, he assures us, yielding within from twelve to twenty-four hours, after the commencement of the albuminous treatment. The formula in which he administers this remedy is the following. Take two pounds of water, and six whites of egg, and heat them well together, then strain, add three ounces of sugar, and as much orange-flower water as will flavour it. Three or four bottles of this mixture must be administered in the course of the twenty-four hours; and the same is also given in injections.—*Archives Générales*, April, 1839.

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20. *Bicarbonate of Soda in large doses a cure for Croup.*—A child after playing for some time in a damp court, was suddenly seized with extreme difficulty of breathing, and so loud as to be heard in the next room, with a hoarse suppressed cough, coming on in fits; the voice almost gone, and the inspirations very noisy. The face was swollen, as also the neck, to which part the child frequently raised its hands as if to tear away something. The expectoration was tough and glairy, and mixed with some cream-coloured particles. At each fit the child started from its bed in great terror. The pulse was 160; and during the remissions the tracheal rattle was so loud as to conceal the natural sounds of respiration; and no doubt existed of its being a genuine case of croup. In these circumstances two scruples of the bicarbonate of soda were ordered to be dissolved in four ounces of milk and water, with the addition of one ounce of syrup of

mulberries, and of this a teaspoonful was given every five minutes; sinapisms were applied to the limbs, and purgative enemata administered every hour.

At the end of two hours shreds of membrane were expelled with the expectoration, but the patient was otherwise much as before.

Three hours after, the child was much better; it had coughed up many shreds of false membrane; the anxiety was less; the cough had diminished in intensity and frequency, and the pulse had fallen to 120 beats; the laryngeal rattle, however, still continued.

Next morning the child was in a very satisfactory state, and had passed a good night. The cough had ceased to come on in fits, but the voice was still somewhat croupy; the pulse had fallen to 100; the swelling of the neck was gone. The laryngeal rattle was nearly gone, and by next day the child was so well as to be able to run about. About three scruples in all of the bicarbonate had been administered during the disease, and it is mentioned as an additional recommendation, that the child had never desired to take any other drink than that presented during the intensity of the disease.—*Edinburgh Med. and Surg. Journ.* from *Gazette Méd. de Paris*, April 13th, 1839.

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21. *Cure of a Stubborn case of Aphonia by means of Ammoniacal Vapours.* By Dr. Gerner.—A young lady was affected, in consequence of a cold, with complete loss of voice, which had already existed three months, notwithstanding all the remedies which were tried. Dr. Gerner, supposing the cause of the affection to be a relaxed state of the mucous membrane of the trachea, at last cured the patient completely in three days by the inhalation of ammoniacal vapours, disengaged from a mixture of a solution of muriate of ammonia and carbonate of potass.—*B. & F. Med. Rev.*, July, 1839, from *Zeitschrift für die ges. Med.* Feb., 1839.

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22. *Nature and Treatment of Phthisis.* By D. J. Corrigan, M. D. (Extracted from a clinical lecture).—John Carroll, a labourer, ætat. 28, was admitted on the 15th October, with hæmoptysis. He had been of very intemperate habits, and was continually exposed to repeated wettings. About seven weeks before admission his illness commenced with severe pains in his back and shoulders, accompanied with cough and trifling expectoration, and he wasted in flesh. About a fortnight before his admission, the hæmoptysis set in, and it has continued at intervals up to the present time. His pulse is 72; tongue foul. In the subclavicular region of left side, there is dulness on percussion, with muco-crepitating rattle; natural respiration very feeble, and with very loud bronchophony.

On the 23d of October the report was, that the hæmoptysis had ceased, and that the sound on percussion under left clavicle was becoming clearer, and the muco-crepitating rattle more limited, but still audible to the extent of an inch and a half under the clavicle. Pulse 96, small.

On the 5th of November an issue was inserted under the left clavicle.

On the 10th the report is, that the cough was less severe; the pulse was only 76; there were no sweats; the sound on percussion under left clavicle was clear, but the muco-crepitating rattle was more audible under the left clavicle, and the expectoration was purulent and abundant.

On the 20th the cough had returned, with pain about the left scapula, and the pulse rose to 88, and became fuller. The crepitating rattle could be heard posteriorly, as low as the inferior angle of the scapula, and anteriorly as low as the fourth rib. He was blistered; the pain and feverishness ceased, and he was then ordered the use of the iodine diffuser three hours per day.

Of the nature of the affection under which Carroll is labouring there cannot be a doubt. It is tubercular disease of the upper portion of the left lung. The only two diseases with which it might be confounded, are pneumonia and catarrh. The case was at no time sufficiently acute for pneumonia, while the history of the case, the cough and wasting before admission, the hæmoptysis, the dulness on percussion, and the consequent muco-crepitating rattle under the

left clavicle, all distinctly point out tubercular deposition in this region as the cause of the symptoms. It might be suggested that catarrh could cause the mucous rattle under the left clavicle, but the mucous rattle of catarrh is always more diffused; and when, as in this case, the rattle is confined to the superior portion of the chest, while, as we examine lower down, the respiration becomes pure, the probabilities are very great indeed against the diseased action being any thing else than phthisis. Were the mucous rattle general over the chest, the diagnosis might be more difficult; but where, as in this case, the respiration is every where pure except in the upper portion of the left lung, and that the muco-crepitating rattle is there constant, there is very positive proof of the mucous rattle having its cause in a diseased state of the tissue of the lung in that situation; and the history of the case, the cough, the wasting, followed by hæmoptysis, refer us clearly to tubercles in the upper portion of the left lung as the disease. There is another sign, if any were wanting, of the nature of the disease, in the attacks of intercurrent pneumonia which have now and then set in. At uncertain intervals, Carroll has complained of pain or uneasiness in the upper part of the left side; and on those occasions the pulse has risen, the skin has become slightly hot, the expectoration has grown viscid, and, on physical examination, the crepitating rattle has been found to extend as low as the angle of the scapula. The proper means having been employed, these symptoms have disappeared, and the crepitating rattle has returned within its old limits. These intercurrent attacks of pneumonia are among the worst and most insidious aggravations of phthisis.

The treatment of a case such as Carroll's may be advantageously considered in relation to two stages—the stage in which he has been since his admission into hospital, and the stage which he himself so accurately describes, which was of five or six weeks' duration, characterised by wasting and cough, with little or no expectoration. I shall first consider the treatment of his present stage, in which there are softened tubercles in the top of his left lung, with intercurrent attacks of pneumonia. I need not tell you how generally hopeless cases of phthisis are, but that recoveries have taken place where there has been tubercular deposition in a lung, we cannot entertain a doubt. The present is a case in which we may be justified in hoping, at least, for such a result. Cases of phthisis may be divided into two classes: the first, that class of cases in which there is a general scrofulous deposition, and in which the deposition of tubercles takes place through a large extent of lung, and principally from the influence of the general scrofulous diathesis. This form may be called constitutional phthisis. I believe it is always fatal. The second form is where some exciting cause has produced local scrofulous action, and where the tubercular deposition may be confined to the particular site, just as we occasionally see scrofulous action occasionally confined to a joint or a gland, without more general deposition. This second form may be called local phthisis. Of this latter form, I hope, is Carroll's case. He was in perfectly good and rude health until seven weeks before admission, when the first stage of the disease set in; and the diseased action has been confined, in a great degree to its original limits. If neglected, such a case would inevitably degenerate into progressive and general tubercular destruction of both lungs. There is, however, a hope, although a faint one, that the diseased action may be arrested.

This will only be attained by the healing of the scrofulous ulceration in the top of the left lung; and it is with the hope of effecting this, that I have put into operation with him the iodine diffuser.

It has often occurred to me, as I have witnessed the surprisingly rapid effects of the local application of iodine externally, both in producing absorption of indolent scrofulous swellings, and in healing up scrofulous ulcerations, that if a plan could be devised of applying it fairly to similar diseased structures and actions in the tissue of the lungs, we might add materially to our power of combating so dreadful a scourge as consumption. The ordinary inhalers I have always seen patients become tired of. The labour, and trouble, and manœuvring, necessary in using the ordinary glass inhaler will not be borne by a

weakened and irritable consumptive patient; while the uncertainty of the dose of the vapour, and the short time it can be used, render it a worthless instrument. Other modes have been devised of administering remedies through the medium of inhalation; but, after repeated trials, I have found the instrument which I now show you so superior to all the others, and so easy of application, that I have no hesitation in recommending it. [See p. 191–2 for description and figure of this apparatus.]

This diffuser possesses many advantages to recommend it. It requires no exertion whatever from the patient, and the extent to which the impregnation of the air which he is breathing with the vapour of iodine, can be regulated to any degree. So strongly can the air be impregnated with the iodine, that I have seen the window curtains of a large bed-room, at a distance from the bed, stained deep blue by the action of the iodine on the starch in the curtains. The air thus impregnated with iodine is not inhaled for a few minutes only, as in the ordinary inhalers, but is breathed for hours without any attention or labour on the part of the patient. The iodine is also diffused through the air mixed with a quantity of aqueous vapour, which deprives it of its irritating properties, and enables the patient to respire it in larger proportion. In using it, I generally direct that the diffuser shall be hung from the roof of the bed. Set to work when the patient retires to rest, it may be allowed to continue in action for three or four hours. The patient falls asleep, and still continues to inhale the vapour. It may be again set in action early in the morning, and continued for three or four hours; while its use does not interfere with reading, writing, or any other occupation in which the invalid may be employed. When the diffuser is used by being suspended from the roof of the bed, when the vapour is partly confined by the bed curtains, the tincture dropping at the rate of about five drops per minute will generally impregnate the air as strongly as the patient can bear it; but if placed on a table in the open room, in which way the patient also sometimes uses it, the tincture may be allowed to drop at a more rapid rate.

The local application of iodine in its most finely divided state—that of vapour—to the diseased surfaces in the lungs may thus be continued for days or weeks, without the slightest distress or inconvenience to the patient, and the quantity thus applied must be considerable. If we calculate that, at the rate of five drops per minute, there are evaporated in an hour five drachms of the tincture, there is then for every hour more than a scruple of pure iodine diffused through the air which the patient is breathing, and a considerable proportion of which must thus come locally into action on the diseased surfaces of the lungs. When we remember the very small proportions of iodine necessary to produce healing of scrofulous ulcers externally, often not more than five grains of iodine to an ounce of ointment, we can easily imagine that, applied through the diffuser, a sufficient portion may enter the bronchial tubes to exercise a beneficial action on the lungs. The iodine administered in this way is sometimes absorbed. Mr. O'Keeffe has tested Carroll's urine, and has on one occasion detected iodine in it. The effects of the use of the diffuser so far in Carroll's case have been very beneficial. His cough has been greatly lessened; his expectoration diminished; and he observed himself, without being asked about it, that his appetite has been increased since he began its use. We shall give the plan a fair trial, and if iodine or any other remedy acting locally on tubercular action going forward in the lungs will arrest that action, this diffuser furnishes us with the means of giving the remedy a fair opportunity.

In the progress of a case of phthisis, such as Carroll's, the attacks of intercurrent pneumonia require to be closely watched. These consist of sudden attacks of congestion setting in on the diseased lung, and they always increase the development of tubercles, or soften down into abscesses those already deposited. Their attack is easily recognised by the heat of the skin, the rising of the pulse, and the changed expectoration, which accompany or precede them. With these symptoms the stethoscope discovers an increased extent of crepitating rattle. The change in the character of the expectoration is of itself

sufficient to point out the danger. The ordinary expectoration from the tubercular abscess is creamy, purulent, friable, opaque, and without bubbles of air through it; the expectoration on the onset of the attack of congestion and pneumonia presents, in addition, sputa, which are tinged with blood; or if not, are transparent, like white of egg, are viscid, and hold entangled in them bubbles of air of all sizes. When these symptoms show themselves, tonics and full diet should be discontinued, a milk or low diet substituted, and leeches applied, and repeated until expectoration has resumed its former appearance.

I have now to recall your attention to what I have called the first stage of Carroll's illness—namely, that period when he complained alone of cough, with little or no expectoration, and during which he sought for no advice or relief. This period, with him, lasted five weeks; and I direct your attention particularly to it, because such a neglected stage is, in very many instances, the stage which is the foundation of phthisis; and the subsequent onset of phthisis may, I believe, in many, very many instances, be prevented by the timely use, in this stage of blood-letting, general or local, with the employment of mercury—a remedy which may, perhaps, at first view excite a little surprise, when named as a preservative against phthisis. I shall now give you the grounds on which I base this opinion. The history of the first five weeks of Carroll's illness, is the history of a great number of treacherous cases of phthisis. A patient has been attacked with slight bronchitis, or influenza. Four or sometimes ten weeks are passing over; the cough is continuing, and, as in Carroll's case, with little or perhaps no expectoration; the patient is wasting, there is debility, the appetite has failed, and, to restore it and the strength, the patient is probably using tonics or taking wine, but without any good result. The examination of the chest with the stethoscope gives no satisfactory result. It sounds well on percussion, the respiration is natural, or if there be any morbid sound, it is perhaps only a very slight sibilous sound heard, and only occasionally, under one of the clavicles. On examining such a patient more closely, there is heat of skin, and a pulse always somewhat above the natural standard, with evening exacerbations, though trifling in degree, of fever. Thus the only positive signs are the low fever, the consequent wasting, the quickened pulse, and the sonorous or bronchial cough. But these are enough; while the stethoscopic examination tells us there is neither ordinary catarrh, nor disease of the tissue of the lungs, to give rise to the above symptoms. Pathology and experience of the termination of such cases tell us what has been going on during this treacherous period.

The bronchial tubes of the upper lobes of the lungs are more liable to suffer from irritation and low congestion than the bronchial tubes in any other part of the chest. It is not necessary for us to discuss whether tubercles are or are not a consequence of inflammation; it is sufficient for us to know that the long continuance of a low degree of congestion is most favourable to the deposition of tubercles. Andral says—"On doit admettre qu'ils (ces tubercles) sont produits d'une manière le plus souvent evidente, et quelquefois latente, par un travail qui différe de l'inflammation proprement dite, non par sa nature, mais par son degré,"* &c. The upper lobes of the lungs, in their bronchial tubes, are peculiarly liable to this, very low irritation, which is so favourable to the production of tubercles.

In such a case as I have just described, omit the tonics and the wine; instead of full diet or nourishing food, given under the fallacious idea of restoring health, put your patient on milk diet, apply leeches to the upper part of the chest, and give a mild mercurial preparation, such as five grains of hyd. c. magnesia, every night until the slightest possible effect is produced upon the gums, and the most rapid amendment will follow. There is no need, in such cases, of giving mercury beyond the degree I have mentioned; and remember that in speaking of it as a remedy against phthisis, its use is in removing that degree

* Clinique Médicale.

of low local inflammation which, allowed to remain unchecked, or improperly treated, would terminate in tubercular deposition, and consequent phthisis.

I shall conclude with a case exemplifying the symptoms I have described. In the last week of October a patient consulted me, who for more than two months had been harassed with a ringing cough, without any expectoration. Her breathing was short, and she was occasionally hoarse. She had wasted a good deal, and her appetite was very bad: her pulse was 92. The chest sounded well on percussion, and the respiration was natural. She had been for some time in the country, without deriving any benefit from it. The long continuance of the cough, the wasting, the debility, and the loss of appetite, naturally excited a dread that phthisis was setting in. As she complained of a feeling of oppression over the chest, I bled her to a small amount from the arm, and applied leeches to the trachea. This was followed by the exhibition of hyd. c. magnesia, gr. iij. c. pulv. ipecac. gr. i. ter in die; and she was directed to discontinue animal food. In a few days the gums were slightly touched, the cough at once ceased, the pulse fell to 80, and her appetite and strength rapidly returned. This case, I think, in conjunction with Carroll's sufficiently establishes the position that a low degree of bronchial inflammation may subsist for a considerable time; that it cannot be detected by the stethoscope alone; that it is cured by local blood-letting and mild mercurials; that if allowed to proceed unchecked, it would most certainly terminate in phthisis; and that mercury, by removing that low degree of bronchial inflammation, may be employed as a most useful preventive of phthisis.—*Lond. Med. Gaz.* 13th April, 1839.

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23. *Alum internally used in Gonorrhœa.*—Dr. Freedrich of Leipzic, strongly recommends the internal use of alumen in the inflammatory stage of gonorrhœa. He gives a tablespoonful three times a day of the following mixture:—℞ aluminis supersulph. ʒj; aq. destillat ℥vj; succi liquir. ℥j. M. In the course of a few days, the pain and heat in passing urine and other acute symptoms abate. When this takes place, Dr. F. usually adds some copaiba balsam and powdered cubebs to the mixture, if the discharge continues. Dr. F. has never observed that the alum disturbs, or in any way interferes with the action of the bowels; it usually diminishes the quantity of the urine.—*Med. Chirurg. Rev.*, July, 1839, from *Schimidts Jahrbucher.*

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24. *Secale Cornutum in Paralysis of the Bladder.*—Dr. Allier has reported, in the number of the *Journal des Connaissances Medico-Chirurgicales* for November last, four cases of retention of urine, apparently cured by the use of the ergot of rye. In all of them the complaint occurred in elderly men, and had come on in consequence of the bladder having been allowed to become over-distended. In one case, the retention had continued for nearly three months before the employment of the ergot was commenced. The dose usually given was from one to two scruples of the powder, in the course of the twenty-four hours.

In all the patients the ergot induced, within twenty-four hours, a degree of irritation or tenesmus of the bladder, and pains in the hypogastric region. Its usually stupifying effects also, marked by general heaviness, dilatation of the pupils, &c. were obvious in all. Occasionally slight convulsive twitches in the lower extremities, were experienced by two of the invalids.

Dr. Allier reminds his readers that it is very necessary to attend to the quality of the ergot, and that it should never be reduced to powder till it is about to be used.

The stimulating effect of this medicine on the urinary bladder has frequently been noticed in women, to whom it may have been given to promote uterine pains. At the same time that it excites the action of the womb, it usually causes a very abundant secretion of the urine.—*Bulletin de Thérapeutique.*

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25. *On Menorrhagic Chlorosis; Treatment with Steel, Ergot of Rye, &c.*—M. Trousseau very justly remarks, that medical men erroneously associate the idea

of amenorrhœa with all cases of chlorosis. Now this is quite contrary to the results of actual experience. We daily see cases, where all the usual symptoms of the latter disease—the pallor and bloodlessness of the surface, the loss of muscular strength, the palpitations of the heart and large blood-vessels, and the *bruit de soufflet* heard over their *trajet*, the various forms of neuralgic suffering, &c.—are present, and yet the catamenia are, so far from being deficient, more abundant and more frequently returning than in health. Such patients are generally said to be *anæmic* and not *chlorotic;* but, if we examine the history of their complaints more minutely, we shall find reason to believe that they are in every respect similar to those of common or amenorrhœal chlorosis. There exists not merely a deficiency of blood, in consequence of repeated losses, but at the same time the process of sanguification appears to be seriously disturbed; and the consequence of such a disturbance is, that a more or less decided abnormal state of the circulating fluids has gradually been induced. That the state of the system, which often accompanies menorrhagia, and which in our opinion is very similar to that in ordinary amenorrhœal chlorosis, is not simple anæmia, appears from the circumstance that mere quietude and the use of a nourishing regimen are very rarely adequate to its removal; whereas we well know that these means will generally suffice for the reproduction of a healthy quantity of the circulating fluids. In other words, nature can often of itself cure *anæmia*, but very seldom can she cure *chlorosis*.

Among the exciting causes of chlorosis, hæmorrhages, whether spontaneous or artificial, have always been enumerated; and when once the chlorotic state is induced, the tendency to such hæmorrhages is often much increased—in consequence no doubt of the existing attenuated state of the circulating fluids. We thus arrive at this most important conclusion—

That excessive menstruation induces an attenuated and dissolved state of the blood—and again, that an attenuated and dissolved state of the blood is a frequent cause of excessive menstruation.

The mutual acting and re-acting of the local and of the constitutional disorders, the one upon the other, should be well attended to in the treatment of such cases.

The menorrhagic form of chlorosis is of much more frequent occurrence among middle-aged than among young females; and perhaps also among married than among single women.

With respect to the treatment of such cases, M. Trousseau remarks that many practitioners feel themselves embarrassed how to act so as to arrest the excessive menstruation on the one hand, and on the other hand to correct the chlorotic state of the system. They hesitate to prescribe the medicine which of all others is the most potent antidote to the latter disorder,—viz. steel—from believing that it is a direct emmenagogue, and that it will necessarily increase the existing tendency to menorrhagia.

But let us consider if in truth the preparations of steel, which are universally acknowledged to be by far the most efficient remedies against chlorosis, are direct emmenagogues, as is usually supposed. That the catamenia, which are very generally absent in the disease, return with returning health, is known to all; but it may be asked, is this the *direct* result of the steel as a stimulus to the uterine functions? or is it not rather merely one of the consequences of the tone and vigour of the system being restored?

The primary effects of steel in cases of chlorosis are the *recoloration* of the tissues, the restitution of the muscular strength, the diminution of existing stomach complaints, and of palpitations of the heart, &c. It is often not until the general health has been quite restored for some time that the menstrual secretion is re-established. The restoration of the health has not been the consequence of the return of the catamenia; but the return of the catamenia has rather been one of the effects of the restoration of the general health. Were it otherwise, the earliest symptom of amendment should be the re-establishment of the menstrual secretion—but this is not the case.

It seems therefore to be quite a fallacy to regard steel as a direct emmena-

gogue or stimulant of the uterus. M. Trousseau goes so far as to assert that not only is it not an *emmenagogue*, but that it is a *hæmostatic*, or vascular astringent; and that its effect is rather to restrain than to increase the catamenia in those women who are quite regular.

These observations being premised, the reader will be at once prepared to assent to the propriety of the treatment recommended by M. Trousseau in cases of menorrhagic chlorosis—that form of the disease, which is accompanied with, or has been preceded by, excessive menstruation. The preparations of steel, by restoring tone to the muscular fibre and plasticity to the circulating fluids, will be found not only to re-establish the general health, but at the same time to diminish the tendency to menorrhagia.

As this, however, is not always the case, and as, it must be confessed, the menorrhagia seems in some instances even to be increased under the use of steel, it is well to be provided with other means, to which we may resort under such circumstances. The *ergot of rye* is one of the best which we can employ.* From one to four scruples of the recent powder may be given in twenty-four hours. M. Trousseau recommends that a dose be given at bed-time; as he is of opinion that there is a greater tendency in all uterine hæmorrhages to be increased during the night, than during the day.

He assures us that he has succeeded, in numerous instances, in preventing the expected return of the menorrhagia by administering the *ergot* the day previously. During the intervals between the menstrual periods, we should recur to the use of steel, as long as any of the symptoms of chlorosis continue.—*Med. Chirurg. Rev.* from *Jour. des Connaiss. Med. Chirurg.*

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26. *Ointment for Chilblains.*—The following application is strongly recommended to relieve this troublesome affection: Take of balsam of fioraventi ʒij.; solution of acetate of lead ʒiij.; olive oil ʒiij.; hydrochloric acid ʒj.; shake them well together. The affected parts are to be rubbed once or twice a day with this embrocation; and a piece of silk paper, moistened with it, should be kept constantly applied. The strength of the embrocation may be easily increased or diminished by varying the quantity of olive oil used in preparing it. When the chilblained skin has become chapped and ulcerated, the embrocation is to be applied only to the surrounding skin, and the little wounds should be dressed with laudanised cerate, to which we may sometimes add with advantage a portion of tincture of benzoin.—*Med. Chirurg. Rev.* from *Bullet. Gén. de Thérap.*

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27. *On Alkaline Indigestion.*—R. D. Thomson, M. D. stated to the Medical Section of the British Association, at their recent meeting at Birmingham, that since he brought this subject before the Association at their meeting in Bristol, he had not only from ample experience confirmed the results of his former inquiries, but had elicited several other conclusions of importance. In the healthy state, there is no doubt that during a portion at least of the process of digestion the contents of the stomach are in an acid state. Some had concluded that this acidity proceeded from the presence of muriatic acid, others that it proceeded from acetic or lactic acid. 1. Whatever this acid may be, there is no doubt that when it accumulates to a certain extent, the stomach can no longer sustain it, and disease ensues in the form of heartburn, acid eructations, &c. 2. Where the contents of the stomach assume any condition offensive to that organ, either from too much acid or from too small a proportion, the stomach, in many cases ejects a clear fluid, which Dr. Thomson has found to be accompanied by different symptoms, according to the chemical re-action of the fluid: thus in heartburn an acid fluid is ejected, but without any cessation of pain in the stomach; while, on the contrary, if a neutral fluid be ejected, according to the experience of the author, the pain is alleviated on the instant that the fluid is got rid of. This is a more rare case of indigestion, but the author has met with it several times.

* The activity of this medicine is found to vary exceedingly. It should be fresh, and reduced to powder only at the time of use.

It may be termed *Neutral Indigestion.* 3. The third form of indigestion which Dr. Thomson has met with is the alkaline state of the contents of the stomach. He terms it *Alkaline Indigestion.* The peculiar features of this disease are a violent pain in the region of the stomach, accompanied sometimes with a feeling of fainting, headach, and more rarely an inclination to vomit. Suddenly a sensation of spasm comes on, as if some contraction were taking place, and the patient speedily finds his mouth full of water, which he is obliged to empty. This operation he has no sooner performed, than he requires to repeat it, and at last a continuous stream flows from his mouth, which endures for some time, when it ceases, and along with it the pain of the stomach. This, together with the chemical re-action of the fluid ejected, appears to distinguish in a very complete manner, alkaline and neutral indigestion from the acid state, all of which have been confounded by former writers. The distinction is the more important, because these different forms require, in some measure, opposite modes of treatment. With regard to the cause of the alkaline re-action, Dr. Thomson stated that after evaporating the fluid emitted from the stomach, and igniting the residue, he had obtained, by crystallization, fine crystals of carbonate of soda. The presence of these, however, he ascribed often to the decomposition of common salt by the process, or to the previous existence of lactate of soda in the fluid. He was more inclined to attribute it to the former source, because the quantity of crystals was so very considerable. Dr. Thomson stated that the ejection of these fluids from the stomach was much more common than was usually imagined, as out of forty or fifty patients admitted daily at the Blenheim Street Dispensary, in London, he generally found one or two affected with such symptoms. For some years past he had made it a rule always to examine these fluids, and the result of his experiments were embodied in his present communication. He observed that these complaints were frequently symptomatic of disease placed in other organs, as the uterus, liver, &c. But the secondary disease was often the more disagreeable, and therefore required to be as carefully treated as the original one.—*Athenæum.*

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28. *Amenorrhœa quickly cured by Leeches to Uterus.*—A lady, 35 years of age, was seized with a sudden suppression of the catamenia in consequence of alarm from thieves having broken into her house. Severe pain in the region of the kidneys and general *malaise* were the consequence. She had been bled and also several times purged without any good effects; and the various emmenagogue medicines in general use were then tried, but all in vain. For nearly fifteen months, she had been almost constantly suffering: she then went to Paris for the sake of metropolitan advice. When she first consulted M. Tauchon, she needed the assistance of two friends to lead her into the room, and to keep her from falling forward: whenever she attempted to raise herself upright, she experienced the most violent suffering.

No signs of disease could on examination be detected in the uterus, rectum, or bladder. The kidneys, ovaries, and also the vertebral column and sacrum seemed to be quite healthy.

The diagnosis as to the cause of the patient's sufferings was therefore obscure; but M. Tauchon did not hesitate to direct his attention chiefly to the re-establishment of the menstrual secretion. With this view, he prescribed that ten leeches should be applied to the cervix uteri. An almost immediate relief was the consequence; and, within twelve hours, the catamenia began to flow. By the end of the week the patient was entirely freed from her long and protracted illness.—*Med. Chirurg. Rev.* from *La Lancette Française.*

SURGERY.

29. *General conclusions relative to the symptoms, effects and treatment of injuries of the Head.*—The following observations by Mr. R. Alcock, are extracted from his lectures delivered at the Sydenham school of Medicine, and are worthy of attention. They refer to a class of injuries, the most complicated and interesting in surgery, and are founded upon a very enlarged experience, the author having been deputy inspector of hospitals with the auxiliary forces in Portugal and Spain.

"1. The most common injury of the head is *concussion*; more powerful in its effects, more universally pervading the fibre of the brain and the system generally, than any other. There can be no injury to the head from violence without it: it therefore complicates all; or, more naturally and simply, this may be considered the one great and elementary form of injury, to which any or all the others must, if they exist, be superadded, when violence has been suffered.

2. "Compression, ramollissement, lesion of structure may exist without concussion; yet so generally are they the consequences of a jar or shock, and so constantly do they require to be discovered and treated, not as simply or singly existing diseases, but as complications of the first great injury, concussion, that the study of them in this form is absolutely necessary to a due appreciation of the effects of injuries of the head. Otherwise we should find, that when we knew the effects of compression, simply, we had yet to learn to distinguish them when supervening on concussion.

"3. The effects resulting from injuries of the head are of several kinds as well as degrees; and as the most practical mode of classing them, they have been referred to the three nervous systems or centres through the medium of which they are manifested.

"*a.* The cerebral system, and such portion of the spinal as contributes to cerebral sensation, perception, and motion.

"*b.* The excito-motory or true spinal system, including all manifestations of spinal reflex actions; among which are respiration, deglutition, vomiting, convulsions, the action of the sphincters.

"*c.* The great sympathetic—the nervous system of organic life, as it was termed by Bichat, governing secretion and nutrition throughout the body, and probably, in a great measure, circulation through the heart's action.

"Lesion of one of these does not necessarily imply, *in primo loco*, injury of any other; although disturbed functions in all generally follow as a secondary consequence. Injuries of the head and spine sometimes, in the first instance, affect chiefly or solely the first; in other instances the second; in others, again all three.

"If one be affected only, and subsequently others, they are generally implicated in the order in which I have placed them. But if the circulation be considered as chiefly referable to the sympathetic, then this will often be the second in order.

"*In proportion as one or more, or as one or the other, of these nervous centres are chiefly implicated, will the nature of the effects and the character of the symptoms developed be varied.*

"The functions of the first or cerebral order may be impaired or apparently annihilated, without, for a considerable period, any serious disturbance of the two following. Any one cerebral function may in like manner be affected, exalted, impaired, or annihilated, without much disturbance of any other part of the same system.

"In some rare cases, this may also take place when the second order is the seat of injury—as in tetanus and hydrophobia; generally, however, the cerebral and sympathetic are speedily implicated.

"The third, when seriously injured, involves the other two generally promptly and fatally.

"The order in which these are implicated in injuries of the head, has no cer-

tain reference, and furnishes but an imperfect scale of degree of injury. A wound of the cerebrum, capable in a few days of destroying life, may leave, until all the vital powers are ebbing, the excito-motory and sympathetic systems unaffected.

"When these are involved, however, as a result of cerebral injury, they always imply a grave and dangerous lesion.

"4. Severity and succession of effects are better guides for diagnosis and treatment in these injuries, than even the accurate knowledge of their exact nature or actual extent, which can rarely be attained. With effects we have to struggle, and they afford valuable diagnostics for the prognosis and the treatment; for by these effects, rather than by the nature of the injury in the majority of cases, must the prognosis be formed. In these cases, it will be found that similar effects succeeding an injury, more generally give similar ultimate results than can be predicated from any similarity of injuries.

"5. It is important to know that similar kinds and degrees of injury, as far as any material alteration or lesion can define them, give very variable effects. The one recovered with some permanent irritability of fibre, the other died; proving the impossibility of predicating, *from any knowledge of the original injury*, what form the sequences will assume. Although even the ultimate effects of concussion are various, there is one form much the most common, and that is permanent irritability of nervous or cerebral fibre.

"6. It is a great error to consider concussion to have ceased its action and influence on the brain and system generally with returning consciousness, sensation, and voluntary motion. The cessation of coma does not mark the termination of the effects of concussion, neither does that injury in a severe degree always produce coma in the first moments.

"A lethargic state, coming on subsequent to the first moments of injury, is very frequent in cases of cuncussion; supervening probably a few hours after the blow or shock. These have hitherto been held to be instances of extravasation, effusion, &c. Their sudden relief by bleeding proves this to be impossible. If these symptoms arise from compression, as I believe they often do, it is the pressure of fluid within the cerebral vessels, acting on a debilitated fibre, which may have lost its power of resistance.

"7. The usual effect of concussion on pupil and pulse is to dilate the one, depress and impede the other. The pulse and the respiration frequently both present the same character.

"Dilatation of pupil; drowsiness; laboured pulse; slightly impeded breathing; in milder forms, vomiting—in these consist the chief features of a moderate degree of concussion, not violently affecting either the excito-motory or the ganglionic system; its effects confined chiefly to the head, which does not always happen, even in slighter degrees of injury.

"Thus concussion, followed beyond its first evidence, presents a group of symptoms and effects in the following order:

"In reference to the cerebral system:

"1. Coma, or depressed action.

"2. Febrile, or exalted action.

"3. Irritability or cerebral fibre.

"To give a clear impression of some of the more important of what may be termed "*Subsequent or secondary effects of concussion*," I will class them in the following order. The most common course of concussion, in various degrees of intensity, has been fully described. These subdivisions may now, therefore, be considered in the light of important deviations from the more usual course, but all distinctly referable to Concussion as a first cause, and unless so classed and considered, calculated to lead to serious errors of diagnosis and practice.

"*a.* From concussion will occasionally result, without any intervening coma, symptoms of irritation or inflammation, attended or not with late developed stupor.

"*b.* In some cases the converse of this may be observed; that is, from the

stupor of concussion no reaction is ever manifest, but the patient gradually recovers from a prolonged lethargy, having never given signs of inflammation or irritability of brain.

"*c.* Again, in other cases, even during the first comatose stage, particularly if the case be complicated by lesion, or the lodgment of a foreign body, an exalted and high inflammatory action supervenes. Either inflammation, or irritation only may become developed, the pupil contracting during the coma, and the pulse beating sharply.

"*d.* Even if a shock or concussion give rise but to a temporary or imperfect state of coma, its subsequent effect may be a quickly succeeding disorganisation of the brain; and this may be either partial or general.

e. "Concussion in other cases seems to cause death by rendering the brain unfit for its functions, without any obvious alteration of structure.

"This effect, the most extraordinary of the whole list, perhaps, is curiously and beautifully exemplified by the occasional effects of concussion on the eye. I have, for instance, observed in that organ the following as distinct consequences of a shock:—

"1. Disorganization of the whole of the contents of the sclerotic.

"2. Partial alteration of structure.

"3. Total destruction of sight; entire loss of visual function, without any trace of disease or perceptible alteration of structure.

"4. Partial destruction, amounting only to impaired vision.

"Mark how perfectly they correspond with the effects observed in the brain; and the confirmation thus furnished by analogy of the accuracy of my views on this subject is the more gratifying to me, that the facts came under my observation second in order, not originating, but explaining that which carefully recorded symptoms and appearances had previously suggested to me as taking place in the brain.

"*f.* Concussion sometimes gives rise, in addition to the diseased action in the head, to others which I shall term "*dispersed effects*," or disease in distant parts. Under this head I place, for instance, abscesses of sudden formation, in the lungs, liver, joints, &c.

"*g.* Under violent concussion neither pupil nor pulse in some cases will give any indication of irritation or inflammatory action, however violently and fatally developed in the brain or its membranes. The pupil will continue fixed and widely dilated, the pulse, slow, laboured, and even feeble.

"8. Compression rarely manifests the same controlling power over the pupils as that which I have attributed to concussion. Lesion occasionally does produce the same effect.

"Compression does not, even when great and extensive, invariably produce dilated pupil. Neither does it necessarily induce stertor.

"Compression may even produce coma of the most complete kind, and yet the pupil remain unaffected and perfectly natural. This I have never seen in violent concussion.

"9. The continued labouring character and slowness of the pulse is one of the best signs of compression—pressure not necessarily from effused or extravasated fluid—it may be from pressure within the vessels; and this is easily determined by depletion, which in extravasation, &c. affords no decided relief; while in the latter form of compression its good effect is prompt and indisputable.

"10. Lesion, unless very extensive, produces less impression on the different nervous centres, and in general fewer symptoms and effects than any of the elementary forms of injury enumerated. It assumes more the form and character of a local disease. The severity and variety of effects seem rather to depend on the degree of attending concussion or compression than on lesion.

"11. Ramollissement will give all the symptoms both of concussion and compression.

"12. An intermittent pulse seems to depend not on any degree of injury to the head, but on some peculiar irritation. It is not a common symptom either

of concussion, lesion, or compression, and but rarely exists in concussion alone, I have occasionally observed it in complicated cases.

"Having now defined and described, as far as limited time will permit, the elementary forms of injuries of the head, and classified the numerous and complicated effects to which they give rise, I proceed to the treatment, which is comparatively simple; the difficulty lies in distinguishing the true character of the case. Unless the coma be of such death-like influence that it seems likely to extinguish life, in which case I would administer diffusible stimuli, I have invariably seen the best effects, and not seldom immediate relief from free depletion. And if the pulse present some volume with its sluggish character, this is the treatment I have successfully adopted in a very large number of cases; nor have I ever seen any injury result from the practice thus guarded.

"Next to depletion I consider the free action of the bowels important; and for this purpose, if there be a state of coma, a purgative enema should be thrown up. If deglutition be possible, the patient should swallow a full dose of jalap and calomel, or calomel and colocynth, followed by a solution of the sulphate of magnesia, and small doses of tartarized antimony.

"Next in importance, I place cold applications, and a shaven head. There was but one order in the militaty hospitals under my direction—viz. to shave the whole head within an hour of admission in all cases of head injuries, as the surgeon then both sees what he is about, and is enabled to make all applications to the head efficient.

"The skin and the kidneys assist much in the antiphlogistic measures, and their action should be promoted; diaphoretics and diuretics combined at intervals with the purgatives. By these derivative or subdepletory measures, the surgeon will much diminish the necessity for large and frequent bleeding; but this must be resorted to without hesitation whenever the inflammatory action is manifested in the brain, or its membrane; and in many cases when stupor comes on after a partial recovery—℥xiii, ℥xviii, or 24 oz., at a time, and repeated the same day if the symptoms do not indicate subdued action. When the pulse changes its character from slow and languid beats, 40 to 60 per minute, to a sharp, thrilly, and more rapid character, generally the dilated or natural pupil will become strongly contracted; these are your chief signs for free depletion; the same actions may exist without being manifest by these or any other symptoms. But when these are present, bleed, and bleed freely; purge and sweat the patient, or death is certain.

"There is, however, an exception to this otherwise very general rule of practice, viz. when the subject of injury has been of a drunken and debauched character; when, in fact the wound is followed by an attack of what may be termed, traumatic delirium tremens. And these cases require much discrimination to be distinguished, since complicated by a severe injury they do not offer the same broad and legible indications of the true nature of the constitutional disturbance. It behoves you to watch carefully and avoid an error which would in all probability be fatal. Notwithstanding the two contrary indications afforded by severe injury to the head on the one hand, and the delirium tremens on the other, you must not think of bleeding. On the contrary, stimuli, and even brandy, combined with opium and doses of calomel, will offer the best chances of safety, perilous as the treatment may seem.

With respect to depletion generally in head injuries, I must also beg you to bear in mind that large and repeated abstractions of blood have a direct tendency to induce irritability of fibre, which is a very general and unfortunate result of concussion, independent of any treatment which may be adopted. Never bleed, therefore, without a definite object and distinct indication, and bleed neither more largely nor more frequently than seems absolutely required. Stimulating the secreting organs, so as to produce increased discharge, will often answer all the purpose of repeated bleedings, and without their disastrous effects.

"If any puffiness of scalp or burrowing of matter take place, one, two, or

three free incisions to the bone generally stop the mischief, and they should be made without any unnecessary delay or hesitation.

In the long-continued irritability of cerebral fibre, bringing on pain of the head, giddiness, &c. on exposure to the sun, or on the application of any other stimulus, I have in some cases found a mild mercurial course perceptibly diminish it.—*London Med. Gazette*, July, 1839.

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30. *Dislocation of the Femur in the Ischiatic Notch with fracture.* Charles Thornhill Esq. relates in the *London Medical Gazette*, (July, 1836,) a case of this in which he succeeded in reducing the dislocation after the lapse of six weeks.

The patient was a collier ætat. about 40. Whilst at work in a mine, a large mass of the roof fell upon him and fractured his thigh at the upper third of the bone, and bruising him much about the hip. The fracture was dressed and after the swelling around the hip had subsided, the dislocation was detected. Six weeks after the accident, the fracture having then united Mr. T. proceeded to the reduction: "A door with a blanket thrown thereon was placed upon the bed, and two staples having been driven into the opposite walls, the patient was instructed to recline upon the door on his left side, with the right shoulder drawn one-third backwards. This latter precaution was deemed necessary, in order to prevent his being drawn forwards upon his face by the first application of the extension. A well-padded band was then passed between the thighs close upon the perinæum, and this was affixed to the staple at the back of the patient, when the pulleys being secured to the opposite staple, as well as to the rings of the knee-belt which had been previously applied, extension was made in the usual manner in a line directly across the middle of the uninjured thigh. After this had been steadily and perseveringly employed for upwards of half an hour, without occasioning much relaxation in the muscles, it was thought advisable to administer the antimonii potassio-tartras, in doses of a grain, repeated at intervals of a few minutes, until nausea should be fully obtained. When three or four doses had been given, the head of the bone began to advance towards the acetabulum, and I could distinctly feel it disengaging itself from its recently formed attachments. At this stage of the operation, my brother having passed a strong band under the upper part of the thigh, got upon the door, and fastening the loop of the band over his own shoulders at the same time that he pressed firmly with his hands upon the crista of the ilium, endeavoured to lift up the head of the bone, while Mr. Roberts forcibly rotated the limb outwards by grasping it both at the knee and ankle joints. Whilst this was going on, one of the straps that secured the band between the thighs suddenly gave way; but as we had another band in readiness, it was applied over the other without loss of time, and without much reducing the amount of extension already obtained. As soon as this was properly adjusted, similar efforts were again resorted to, and continued for some time without success. By this he had taken about ten grains of the tartar emetic, and the system began to be somewhat under its influence, as was manifested by the increasing pallor of the skin, and the comparative looseness and tremor of the muscles in general; but while we were employed in augmenting the extension, another difficulty presented itself, in consequence of the knee-strap gliding over the surface of the patella, although the precaution had been adopted throughout to keep the limb at right angles. This was replaced as speedily as possible, and our efforts were renewed as assiduously as before. After the patient had taken the twelfth dose of the potassio-tartrate he became very restless, and it was evident that nansea had been duly produced. He now implored us most earnestly to desist from the further use of means; and as extension had been carried as far as was justifiable, it was resolved, before we abandoned the case as hopeless, that another and a last attempt should be made. For this purpose my brother endeavoured once more to elevate the bone, while Mr. Roberts performed rotation outwards, as already described; and after these efforts had continued for two or three minutes, the head of the femur was forced into its socket with an audible crash, the poor fellow having been under treatment for an hour and three-

quarters. On relaxing the pulleys and disengaging the apparatus, the limb was found to be of nearly equal length with the other; but the difference that existed might be wholly attributable to the effects of the fracture.

The empl. thuris comp., spread upon linen, was applied over the joint, and the bandage ordinarily used in such cases was passed round the waist, and closely bound over the unsound hip. The patient was then placed in bed, and ordered to remain there for the space of a fortnight. Before the expiration of this time, however, he got up, and went out of doors upon crutches, though as yet he was unable to bear weight upon the leg.

About this period he came up to my surgery to be dressed. On examining the hip there was considerable enlargement and difigurement, arising from the thickened state of the muscles and integuments, and also from a large mass of callus which had been deposited about the joint; and to so great an extent had coagulable lymph been thrown out, that it was extremely difficult to trace the characteristic prominences of the bony structures. Indeed, in no case that had ever fallen under my observation do I remember having previously witnessed such an immense deposit in the neighbourhood of the acetabulum: notwithstanding, the different motions of the limb, as far as they could be performed, were perfectly natural, and the man seemed highly pleased with the progress he had already made. The mercurial plaster was now substituted for the empl. thuris comp., and this was renewed every week for about a month or five weeks. But as absorption had taken place only to a trifling extent, and as the motion of the limb continued to be in a measure impeded by the callous mass, the size of a nutmeg of the iodine ointment, in the following proportions, was directed to be rubbed every night round the joint: ℞. potassa hydriod.; tinct. iodinæ, ăā. ℥j; ung. cetacei, ℥j. M.

On the 10th of May he walked on crutches to Dudley, a distance of five miles, where he was seen by Mr. Roberts, and also Mr. Badley, who concurred in the propriety of continuing the iodine preparation for a few weeks longer.

At the time of the present report (May 29th) he represents himself as rapidly gaining strength and power of mobility in the joint. He is able to bear his entire weight on the injured side, and he talks of substituting a stick for the use of the crutches. There has been considerable absorption of the morbid deposit, though it is still sufficient to occasion a slight disfigurement about the hip. Much of this callous mass, it is to be feared, will remain permanently; but this will not be of any great consequence, as even now it does not appear to interfere materially with the motions of the limb. These have already become very extensive; but some months must necessarily elapse before they are perfectly restored to their pristine condition.

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31. *On the Division of Tendons, and on their Mode of Union.*—Benj. Phillips, Esq., in a paper communicated to the *London Med. Gaz.* (July, 1839,) makes the following interesting observations on this subject.

"The dictum of Hippocrates, 'that tendinous structures cannot be cut with impunity,' held almost exclusive sway over men's minds up to nearly the end of the last century. Some persons, among whom were Paul Barberette, Meekren, and Abraham Titsingh, however, denied their sensibility, and maintained that wounds of these structures produced no general reaction. Others, among whom were Paré and Petit, believed that such wounds were very dangerous, producing spasm and great general reaction. Others, such as Boerhaave, Cowper, Platner, who, adopting the opinion of Galen, that tendons arose from nerves, taught that injuries of tendons are as serious as those of nerves, producing tetanus and other spasmodic affections. It was the apprehension so entertained, which, it would seem, prevented Marianus from using the knife, in making way for the stone to be extracted from the bladder, and induced him to prefer tearing those parts to a sufficient extent by means of his dilators. Indeed, except in the case of a few bold innovators, such as Tulpius (1641), Roonhuysen, who cut the tendon of the sterno-mastoid successfully for the cure of a case of wry neck (1674), Blasius (1677), Meekren (1780), and Ten Haaf (1791), tendinous

structures have been respected up to very late times; for the momentary resuscitation of the principle by Thilenius in 1784, by Michaelis in 1811, and by Sartorius in 1812, did not cause the adoption of the system.

"Petrini, in his memoir, 'Sull' insensibilita ed irritabilita,' published in 1735, seems first to have demonstrated that tendons and aponeuroses might be 'dissected' without fear; but certainly the prevalent opinion was opposed to him; and the memoir of Jacques Fr. Chat, seems to have been an epitome of the opinions of the time on the subject. He concludes by saying, 'On doit donc éviter la section des tendons,' (1742.)

"No very clear conviction seemed to exist on men's minds with regard to the possibility of union in divided tendons until the time of Titsingh, who said that wounds of tendons were united by the interposition of callus, which is organised, and by which they are cured in a few days. Stalpart Van der Weil (1777) also states that they are united by callus, like bone. Duchanoy (1775) and Bezoet (1765) state that at first a nodosity is distinguished, which soon acquires considerable consistency, and constitutes a firm bond of union.

"These opinions obtained more consistency when maintained by Moore, Prochaska, Gordon, Boyer, and Thompson, who stated that the fibres of regenerated tendons are not disposed parallel the one to the other; that they are less glistening; and that the cicatrix is thicker than the tendon. Murray (1787) said that he had seen divided tendons unite like muscles, by means of plastic lymph, which becomes organised and transformed into a very dense cellular tissue. Bichat, in speaking of union after section of the tendo Achillis, says, that from the two ends of a tendon a fibro-albuminous matter is exuded, which is gradually condensed, and unites one to the other; that this matter is endowed with a sort of 'ductility,' which allows of its elongation and extension.

"No man sought more fairly and completely to work out this part of the subject than Delpech. To satisfy himself of the principle upon which he ought to act, he made many experiments upon brute animals; and the knowledge so acquired he successfully applied to man; and it is to me inconceivable how his merits, as connected with this subject, have been so greatly overlooked. Some years afterwards, Stromeyer, in conjunction with Günther, a veterinary surgeon of Hanover, went over the same ground with Delpech; he applied the principle successfully to man, and his success caused its general adoption.

"The mode of union was carefully observed by Duval (1837), who says, 'As soon as the tendon is cut, the extremities are separated by muscular retraction. Some hours after, the surrounding cellular tissue is inflamed; twenty-four hours after, this tissue is bathed in serosity, and looks œdematous. The skin participates in this turgescence. Sometimes we find a mass of red matter, not unlike a clot of blood, between the ends of the tendon. From the cellular tissue at the circumference of the extremities of the tendons, filaments set out towards a fibrinous matter, which, however, is not always met with; but the cellular tissue is always inflamed during the first seven or eight days. Thirty-six hours after the section, the substance between the extremities exists in the form of a ligamentous membrane, much more developed superiorly than inferiorly. The third and fourth day this intermediate tissue acquires much thickness, and becomes, as it were, fleshy, dark red internally, whitish at its circumference. From the sixth to the eighth day it offers the same form with the tendon: the tendinous organisation of this substance proceeds from the exterior towards the interior, by the condensation of cellular laminæ. From the fifteenth to the twentieth day this organisation is complete, its red colour no longer exists, and this new-formed tissue is as solid and as resistant as the tendon itself, from which it differs only in colour, which is less white; and sometimes by a little less thickness.' We may complete this part of the subject by a short quotation from the commentary of Ammon on the same subject:—'The tissue thus formed fills, by the end of a fortnight, the same functions as a healthy tendon, with this exception, motion is a little more difficult, in consequence of the new substance being a little less elastic than the old, and also in consequence of its adhering, o a certain extent, to the surrounding structures.'

"One important question still remains to be discussed. We have ascertained that a divided tendon will unite firmly, and that, at the end of a certain time, the medium of union can scarcely be distinguished from the original structure. We believe that, in fractured bones, separation of the fractured extremities cannot be carried beyond a certain point without involving the danger of non-union; what the extent may be it is not easy to define. How far the extremities of tendons may be separated with impunity, is an important question in our subject.

If the section of the tendo Achillis be made, it will unite by means of a very fine dense medium, even though the distance between the cut extremities be considerable. Molinelli states, in the Memoirs of the Academy of Bologna, three cases, which are good evidence of this fact. In one, the tendon had been cut at two fingers' breadth from the calcaneum; the superior portion was retracted, and the inferior portion, with the exception of two lines, was removed; yet the two portions were perfectly united without shortening. Clement, of Avignon, according to Heister, saw a case in which the separation of the two ends, in a similar case, was above two inches, and yet the union was firm and complete. But, as might be expected, there is a limit beyond which this separation is imprudent. What that limit is, in man, I do not know; but, in dogs, about three inches is the maximum point, at which the development of a proper bond of union seems to be practicable; at least, in all the cases I have known, it has failed when the separation has extended to four inches.

"This is a point of great importance in deciding whether extension should be promptly and firmly employed after the section of the tendons or not. Some persons recommend the immediate application of the principle; and, further, that it should be energetically employed. If the reasoning could be applied to the human subject which is derived from experiments on brute animals, it is clear that it would be imprudent to produce a separation between the cut extremities to the extent of four inches; that it is not easy to determine how much short of that, separation might be employed with impunity. I have known a separation to the extent of nearly two inches to be made in the human subject, immediately after the section of the tendo Achillis, without any inconvenience; I have known a separation of four inches in a dog, without union.

"In this state of the question, I think a middle course best. Some men do not employ extension for many days—until, in fact, the medium of union is organised; others apply extension at once. In the one case, the medium may not readily yield to extension; in the other, the medium may not connect the cut extremities."

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32. *Case of Section of the Ham-String Tendons for the Cure of Contracted Knee-Joint.*—Benj. Phillips, Surgeon to the Marylebone Infirmary, relates, in the *Lond. Med. Gaz.*, (July, 1839,) the case of a female 29 years of age, general health good, in whom he divided the ham-string tendon for the cure of contracted knee-joint. Five years previously she had suffered much from rheumatism, which affected principally the knee-joints and the hands. From this affection she suffered for two years and a half, during which the leg of either side became more and more flexed upon the thigh, and extension was impossible. A great variety of mechanical means were used, for the purpose of endeavouring to procure extension, but without the slightest amendment. She then proceeded to Bath, underwent the usual course of treatment there, combined with attempts to extend the limbs by means of certain modifications of Amesbury's apparatus, but returned home, no better than she was when she left it. On her return, she was placed under the care of Mr. Crellin, of St. John's Wood, whose treatment dissipated the remaining traces of rheumatism; but the contraction of the ham-string tendons remained unchanged. During the succeeding two years and a half, her general health continued good, and she experienced no further attacks of rheumatic pain.

In January, 1839, Mr. Crellin consulted Mr. Phillips in the case. "I found her," says Mr. P. "almost bed-ridden, the right leg presenting with the thigh an angle of

55 degrees; beyond that point extension could not be made, but flexion might be proceeded with until the heel very nearly came in contact with the buttock. The left leg was flexed to a much less extent than the right, though the heel of that is two inches and a half from the ground: it was, however, three inches and a half longer than the right. The joint appeared on either side to be unaffected, and no thickening was apparent. At the first view it seemed as if the patella were slightly displaced laterally; but this was more apparent than real, for, in the leg upon which I operated, the patella is now perfectly natural.

"When the hand was placed upon the posterior part of the thigh, from the tuberosity of the ischium, the muscles were tense and hard, and, in the ham, the tendons were like extended cords.

"Nine months ago, when the case was first mentioned to me, I had recently seen an account of an operation performed at Antwerp, for the purpose of overcoming the resistance offered by the flexor muscles; and, when I consulted with Mr. Crellin, I at once recommended a somewhat similar operation in this case, and, as the patient's health was good, and as suspense would not probably improve her condition, the operation was performed on the succeeding day.

"The Antwerp case will be found detailed at the conclusion of the paper.

"I saw possible inconveniences from performing the operation as practised by Lutens, of Antwerp, and I saw no difficulty which could attend the section, made by means of the smallest external opening which would admit of the introduction of a proper instrument—such as is used in the section of the tendo Achillis.

"Accordingly, on the 10th of January, in the presence of Messrs. Crellin and M'Ilree, I effected, without much pain or difficulty, a section of the tendons of the semi-tendinosus and the biceps, which allowed of an immediate extension to the amount of between two and three inches, and caused the disappearance of the tension at the back of the thigh. The operation was performed in the following way:—The patient lay, as nearly as she could, upon the face, and extension was made as far as possible, so as to produce a very marked cord-like tension of the ham-string tendon. A very straight blunt-pointed knife, such as is used by Bouvier in the section of the tendo Achillis, was glided on its flat under the tendon of the biceps, between it and the bone; its cutting edge was then directed upon the tendon, a sawing motion impressed upon it, and the knife soon passed through it, without injuring the integuments. It immediately retracted, to the extent of an inch. A similar course was taken with the semi-tendinosus. No blood was lost, and strapping was employed to bring together the lips of the two small incisions. All went on very satisfactorily, and I proposed to begin extension on the third day; but, in preparing for this, I found I had still resistance to overcome: the semi-membranosus would not yield, and I at once decided to make a similar section of its tendons. The same means were employed as before, but the different portions of this muscle are not so easily cut; however, I continued to incise so long as I found this muscle offering resistance. This was soon accomplished, with comparatively very little suffering; its section allowed of our increasing extension by another inch. All went on very well, and, in two days more, extension was commenced, with a modification of Amesbury's apparatus. For some days, the matter seemed to proceed propitiously, but then she complained much of pain on the internal surface of the tuberosity of the tibia, at the point of insertion of the cut tendons; this was subdued by small doses of morphia, and the screw was very sparingly used. When the screw had been used for some days, to the amount of a single evolution daily, she complained of pain at the patella; this was borne for a few days, but at last increased in severity, though there was no tumefaction nor much heat about the joint. I now divided the knee-cap of the instrument into two portions; one of which was applied above, the other below, the patella. Gradually all pain and discomfort ceased, and soon I had the very great comfort of finding that the turns of the screw were nearly exhausted—that extension was almost complete. In a few days. I removed the instrument, and discovered that there was scarcely any tendency to contraction; that the muscles were capable of extend-

ing and flexing the leg at will, though at first very slowly. Every day the power increased; every day the extension was more perfect; and as much more rapidly produced as she bore more weight upon the affected limb. At this time the foot of the affected leg, and particularly the tarsal portion of it, became the seat of subacute rheumatism, which still affects and prevents her from using it; but happily there is no disposition in the knee-joint to relapse into its former condition.

"Some time since, I obtained a Thèse sustained at Paris, by M. Duval, brother of the orthopedist of that capital; in which are detailed seven cases upon which his brother had operated.

"The first was treated in October, 1837. The patient was a boy of eleven, who, at the age of five, suffered from phlegmonous inflammation around the knee-joint, with abscesses, which were followed by sinuses, which continued open during the next four years. Motion at the joint was obscure. On the 10th of October, he divided the tendons of the biceps, the semi-tendinosus, and membranosus muscles. At the end of three weeks, the leg was extended on the thigh, and the boy was able to walk without crutches.

"His second patient was a boy of twelve. At five, he hurt the left knee. The injury was followed by inflammation and abscess, which continued to affect the neighbourhood of the joint for five years and a half, when the sore cicatrized. The leg was at that time so flexed upon the thigh, that a straight line, drawn from the middle of the posterior part of the thigh to the heel, was removed nearly six inches from the ham. The tendons of the biceps, the semi-membranosus and tendinosus, were cut through, and in six weeks he was enabled to walk pretty well.

"The third patient was six years old. At two years and a half, he had symptoms of meningitis, which paralysed the left side of the body. The paralysis of the lower extremity was accompanied by contraction of the ham-string tendons. The same tendons were cut as in the former cases. At the end of twenty days, complete extension could be made, and, at the end of seventy-three days, he could extend it himself; but the paralysis interfered with progression.

"The fourth case was that of a boy, who, at two years old, had a large boil in the ham; suppurative inflammation extended around the joint; fourteen or fifteen abscesses had been opened during the succeeding five years. At the expiration of this time all the abscesses closed, and the articulation became sensibly smaller and less painful; but the leg was flexed, so as to describe with the thigh a right angle. A section of the same tendons as in the former cases was made, and allowed of immediate extension to the amount of two inches. An extending apparatus was employed, but eight months was required to restore it to its natural direction.

"The fifth case was that of a young woman of twenty, who, seven months and a half before, had great itching at the knee. It swelled, and presented ampullæ almost like those in superficial burns. The vesicles disappeared in a single night, but the swelling increased. Leeches, blisters, and caustics were applied with benefit, but a certain portion of tumefaction persisted. During the whole of this time, flexion had been more and more marked, and, at the time of the operation, the limb described a right angle. A section of the biceps and tendinosus was made; an extending apparatus was employed, and, in thirty-two days, she began to walk.

"The sixth was a man, aged thirty-five, who had paralysis of the right inferior extremity; this was accompanied by considerable flexion of the leg on the thigh, and the ham-string tendons were tense. In this case, the impression produced on M. Duval's mind was, that the contractions depended upon the muscles of the calf, which are also flexors of the thigh upon the leg. A section of the tendo Achillis was made, and, in six weeks, the cure was complete.

"The last case was that of a patient aged twenty. Three years ago, he fell on the right knee, which became inflamed; and, while he kept his bed, the leg became flexed; it remained so many months, and, when he got up, the toe alone rested on the ground. Many means were ineffectually tried to restore the limb

to its natural condition. The three tendons of the ham were like tense cords; they were cut, and at once the limb could be extended to the amount of two inches; extension was employed, and, in twenty-five days, the limb was perfectly straight, and the patient could walk on it. Three or four days after the operation, acute inflammation was developed at the knee; twenty-five leeches and emollient cataplasms were applied, and, in eight days, it was dissipated.

"In the month of February, 1837, M. Lutens divided the ham-string tendons at the hospital at Antwerp. The case was that of a man named Brilet, a sailor, who, in July, fell from near the mast-head to the deck of a ship, the back of his right thigh coming in contact with the jib-boom; the contusion was great, and the extravasation of blood considerable. In October, he was placed under the care of M. L.; he found no trace of inflammation remaining; but the back of the thigh, from the ischium to the knee, felt as if cords were tightly drawn along it. The leg flexed upon the thigh, and extension impossible. In the attempt to make extension, the tendons became extremely tense, and no plan which was adopted produced any relaxation. If he tried to walk, the toe rested alone on the ground, and was turned outwards.

"The articulations of the hip and the knee were free from disease. All means of procuring extension failing, M. L. consulted with M. Gougeé and M. Decondeé, who at first thought nothing could be done to relieve this condition. Afterwards, M. Decondeé concluded with M. L. that it might be well to make an incision through one or other of the muscles near the ischium. Two months elapsed, when M. L. decided to make an incision on either side of the knee. A bistoury upon its flat was glided under the semi-tendinosus tendon, about two inches above its inferior attachment; the edge was then directed upon the tendon, which, with the aponeurosis and skin, was at once divided. On the outer side, the sheath of the biceps was exposed, and the muscle cut through. The next day all hardness at the back of the thigh had disappeared, and the leg could be made perfectly straight, and an immoveable bandage was applied to maintain extension. He now moved about in the ward, and on the thirtieth day the wounds were dressed with dry lint; cicatrization proceeded slowly. Three months afterwards, he could walk pretty well, and without a stick, some little difficulty was experienced even then in flexing the leg upon the thigh, but still it could be accomplished.

"Once the operation has been performed by Dieffenbach, but I am not in possession of the particulars of the case; once by Mr. Liston, without success; once by Dr. Little, with very partial success.

"I know of no other case in which the operation has been performed; but those which I have detailed present a sufficient variety of causes of contraction; the operation has not been attended by any unpleasant consequences, and the results have been extremely favourable.

"Towards the autumn of the present year, I propose to make a section of the tendons in the left ham of my patient; and I shall probably lay before the profession the result of that operation."

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33. *Ætiology of Club-feet.*—M. Guerin, one of the most celebrated orthopedists of Europe, recently presented to the Royal Academy of Sciences, a memoir the main object of which is to prove that the immediate cause of club-foot, is muscular contraction, and that this contraction is always connected with, and is doubtless owing to a disorder of the faculties. He has examined an immense number of deformed and monstrous fœtuses, and he has thus been able, he assures us, to follow, step by step, the relation between the muscular contractions, and the existence of disease in the cerebro-spinal axis—from a mere spot of morbid alteration of one point to the complete destruction of the brain and spinal-marrow.

The primary seat of the mischief is, therefore, to be found in a disease of the nervous centres; a spasmodic and permanent shortening of the muscles, whose nerves are derived from the diseased part, is the consequence; and in this manner a deformity, more or less considerable, is gradually induced and established.

Sometimes the convulsive affection has been general, affecting almost every part of the body; and then we find that not only are the limbs contracted, but that the features of the face also are more or less distorted, that the eyes squint, and that perhaps the shape of the cranium is deformed, or that the two sides of the body are unequally developed.

In other cases—and these are by far the most numerous—the muscular contraction has been quite local, and limited to the muscles of one part, such as of one leg or foot. That the deformity is really owing to the cause which we have now mentioned, is made evident by an attentive examination of a case of club-foot. We find that the muscles of the affected leg, especially the *gastrocnemii*, have undergone a more or less complete fibrous transformation—the natural consequence of the continued and exaggerated contraction to which they have been subjected.

In the living subject, the calf of the leg is found to be flattened, shortened and very prominent, with hard resisting edges; the toes are separated from each other; and the instep is much arched and drawn to one side or to the other. In short, we perceive an exact relation between the characters and direction of the deformed part and the degree of the contracted, tense and *salliant* state of the muscles of the leg. Lastly, the deformity may in many instances be removed almost instantaneously by dividing the tendons of the contracted muscles.

When the retraction of the muscles has continued for a length of time, they are always observed to become more or less wasted or atrophied, compared with the other muscles of the limb. There is, therefore, a degree of *arrested development* to be taken into account in the ætiology of such deformities, as club-feet, &c. There are, in short, three elements of morbid action to be admitted in analyzing the causes of these congenital irregularities—the spasmodic retraction of the muscles, a certain degree of paralysis, and, lastly, a consecutive arrest of development in the affected muscles.

M. Guerin sums up the results of his numerous observations in the following propositions:

1. Congenital club-foot is the effect of a convulsive contraction of the muscles of the leg and foot.

2. In the absence of general or direct traces of the convulsive affection, we may almost always discover some immediate characters, which indicate the nature of the exciting cause.

3. There are three constituent elements in the retraction of the muscles of the part—viz., the immediate shortening of their substance and tendons, a certain degree of paralysis, and lastly a consecutive arrest in the development of the retracted muscular substance.

4. There exist no other causes of *genuine* congenital club-foot, than convulsive muscular retraction. The pressure of the parietes of the uterus on the fœtus appears indeed in some cases to produce a deformity of the limbs and feet, similar to, but not indentical with club-foot.—*Mémoires de l'Académie.*

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34. *Wound of the Heart.* By Dr. Steifensand, of Crefield.—Wounds of the heart have always been accounted extremely dangerous; and although there are examples in which death followed upon penetrating wounds of the heart, only after a lapse of some days, or even weeks, yet in general such injuries are regarded as necessarily fatal.* Lately, however, doubts have arisen as to the necessarily mortal character of wounds of the heart, and cases are quoted in which cicatrices of the heart, or even foreign bodies lodged in its substance, were found after death. The followlng case is interesting, as it shows the continuance of the functions of the heart for some days after severe injury.

C. H., a young man, ætat. 20, was stabbed on the evening of the 16th of September, 1837, probably with a knife, by some person unknown. After receiving the wound, he walked about 100 paces, and then fell into the arms of

* See an interesting paper on this subject, by Dr. J. R. Coxe, in the No. of this Journal for August, 1829, p. 307.

his companions, exclaiming that he had been stabbed. He was carried to his house, about a mile distant, and a surgeon was immediately sent for. The wound was about an inch in length, situated on the right of and close to the sternum, between the third and fourth ribs, and running in an oblique direction downwards. It had ceased bleeding; a compress was applied, and some antiphlogistic medicine prescribed. For some days the wound appeared to be superficial, but the patient was always extremely restless, and much distressed by thirst. On the 20th, whilst at stool, there was a sudden hemorrhage from the wound, which was, for the moment, stopped by the application of a fresh compress, but returned repeatedly, so that the surgeon, who till now had not been apprehensive of danger, became alarmed, and called in Dr. Steifensand. On the afternoon of the 22d, Dr. S. found the patient lying on the back, pale, with no pulse, the extremities cold, and the respiration oppressed. The beat of the heart was audible on applying the ear to the chest, and was accompanied by a peculiar short metallic sound. Black blood flowed from the wound, and the quantity was increased by pressure on the walls of the thorax. The probe was arrested by the cartilages of the ribs, and the state of the patient did not warrant a more particular examination. The bandage was applied anew, and the patient recommended to remain as quiet as possible. The restlessness, however, still continued, and he died on the morning of the 23d.

On examining the body, the right cavity of the chest was found filled with dark fluid blood. The knife had traversed the cartilage of the fourth rib of the right side, had divided the mammary artery, and passed through the pericardium into the right auricle, near its junction with the ventricle. The wound of the pericardium was about three lines in extent, that of the auricle about two lines. The right lung was collapsed, and pressed upwards.

In general, wounds of the heart are not followed by immediate death. Ollivier has collected fify-four cases of penetrating wounds of the heart, among which were twenty-nine of the right ventricle; and in these with the exception of two cases, death ensued between the fourth and twenty-eighth days. Twelve of the cases were wounds of the left ventricle, and these with the exception of three, which survived respectively forty-nine hours, three days, and ten days, proved immediately fatal. The greater frequency of wounds of the right ventricle depends evidently on its position, and the more sudden death in wounds of the left ventricle is owing to the difference of structure and function.—*B. & F. Med. Rev.* July, 1839, from Casper's *Wochenschrift*, No. 15, 1838.

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34. *Ivory Bougies*--Charriere, surgeons' instrument maker in Paris, has exhibited to the Academy bougies and other instruments, made of flexible ivory (ivory from which the calcareous matter has been extracted). They are according to the pattern of some bougies given to him by Dr. Juterbock, of Vienna. They serve the purpose completely of elastic gum instruments, and have the great advantage, that they may be made in a few days, whereas the preparation of caoutchouc instruments occupies several months. In a practical point of view, the ivory bougies have the advantage, that when they are dry, any desired bend or curvature may be given to them which is retained nothwithstanding their elasticity. The dryer they are on introduction the more they expand, without losing in durability and firmness.

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35. *Penetration of the skull and membranes of the brain by a nail—Suppuration under the bone—Trephine, cure*—By Samuel Cooper. Frederick Rudd, ætat. 12, admitted into the University College Hospital, March, 14, 1839. About three weeks prior to this date, a door fell on his head, and a nail which projected from it penetrated through the right parietal eminence. He was not completely stunned by the blow, merely experiencing a little giddiness. Around the wound it seems that an effusion of blood under the scalp ensued, producing a swelling of about the size of a pigeon's egg. The hair was cut off the part, a leech was applied, by the direction of the practitioner first called in, and some aperient

medicine given. For ten days after this he appeared to be well, playing and taking his food as usual.

About the eleventh day after the accident he began to lose his appetite, complained of pain in his head, and was sick. These were the first symptoms of mischief within the cranium. On the sixteenth day he became delirious; but this state subsided after the administration of a dose of jalap.

On his admission into the hospital, there was a small wound over the most prominent part of the parietal bone, of a size just sufficient to admit a quill. Around this the integuments were somewhat swollen and puffy, and from the wound itself some fœtid purulent matter exuded. It was found that a probe could be passed through the aperture in the skull, so as to touch the dura mater. Pulse 100; tongue white; skin hot; pupils dilated. Some stupor and drowsiness, but the intellects, in other respects, little affected. Frequent vomiting of bilious matter. Severe pain in the right side of the head, and across the forehead.

Three grs. of calomel every six hours. Scalp to be shaved, and evaporating lotion applied.

1 o'clock.—As the symptoms continued, and they indicated suppuration under the parietal bone, I made a crucial incision; and the flaps or angles were reflected, together with the pericranium. Some free hemorrhage followed, and nearly half a pint of blood was lost. A small oval aperture in the prominent part of the parietal bone was thus brought into view; and I noticed that some fœtid matter lay on the outside of the bone. A portion of the parietal bone, of the size of a shilling, was sawn out with the trephine, so as to expose the dura mater, which had a darkish colour, was thickened, and covered with a layer of purulent matter, which was sponged away. There was also some pus adhering to the inner table of the circle of bone taken out. Pus was also noticed to issue out of the small aperture made by the nail in the dura mater. This I did not see myself; but it is not improbable that pus lay under this part of the dura mater, because the pulsatory movements of the brain were not perceptible within the perforation made with the trephine.

Cold evaporating lotion applied, and a saline antimonial mixture ordered, with calomel gr. iij. every six hours.

Without entering into further details, I may state, that with the exception of a slight degree of diplopia, and a little sickness occasionally taking place after meals, and excited probably by the tartarized antimony, this case went on most favourably, and the boy has since been discharged perfectly cured, and with his vision in every respect right again.

Remarks.—It is a universally approved maxim in surgery, that whenever purulent matter lies close upon, or compresses, or disorders the functions of an important organ, a free outlet for such matter should be made without delay. The febrile symptoms—the headache; stupor, and dilated pupils—the puffy swelling of the scalp—the manner in which the skull had been struck and perforated by the nail—the probability even that the inner table might be splintered—all these considerations led me to believe that suppuration of the dura mater had occurred, and that unless a free outlet for the matter was promptly made, the boy would have little or no chance of recovery.

Here I deviated from the rule which is always inculcated in my lectures, that the trephine cannot often be applied with benefit while the patieut retains the power of voluntary motion--retains his intellectual factulties—and is not afflicted with urgent symptoms of pressure. But exceptions to this maxim are recognized; and one of these is the case of suppuration of the membranes of the brain. You may also be justified in trephining what is termed a punctured fracture, to the nature of which this accident approximated, because you will find, though it did not happen in this instance, that, in the generality of cases, the inner table is splintered and depressed, and the early removal of such splinters is the best way of preventing dangerons consequences.—*London Med. Gaz.* May, 1839.

36. *Establishment of an Artificial Anus.*--At a late meeting of the Royal Academy of Medicine, M. Amussat communicated the following remarkable case:

"Mrs. D., 48 years of age, had long suffered under constipation, severe pain on going to stool, and hæmorrhage from the rectum; the bowels were evacuated only every seven or eight days. In the commencement of May last, Mrs. D. was treated by the author for a slight affection of the uterus, and was on the point of setting out for the country, when she was seized with obstinate constipation. Every remedy was now employed, but without avail. M. Amussat examined the rectum, but did not discover any obstacle in this part of the canal, nor any trace of fœcal matter. Frequent consultations were now held with MM. Brechet, Recamier, &c., and it was, at length, decided to have recourse to an operation, the patient being reduced almost to the last extremity. The comparative merits of the different modes of establishing an artificial anus were now discussed, and Callisen's plan, as modified by M. Amussat, was selected. The operation was performed on the 2d of June, in the following manner: The patient having been placed on her abdomen, the trunk elevated on pillows, a transverse incision was made at two inches above the crista ilii, and over the prominence which was evidently produced by the left lumbar colon. This incision extended from the common body of the sacro-lumbalis and longissimus dorsi muscles to the middle of the crista ilii. The superficial fascia, dorsal, and external oblique muscles, were next divided, in the same direction, and, layer by layer; the internal oblique and transverse were next divided, and by crucial incisions. A small arterial branch was now twisted, and a layer of fascia, divided by a crucial incision. This last exposed the fatty cellular tissue which lies immediately above the intestine; it was carefully removed by means of the curved scissars, and two ligatures were passed through the walls of the intestine, in order to keep it *in situ*, and prevent its retraction. The surgeon having distinctly recognised the colon *free to a considerable extent of peritoneal covering*, passed a trocar into the most prominent point of the intestine, on withdrawing which a quantity of gas and liquid fæces escaped. The patient immediately felt much relieved. A bistoury was now passed along the canula, and the opening of the intestine freely enlarged in various directions. An abundance of gas and fæces escaped, and when injections were thrown into the superior and inferior portions of the colon, three basinfuls of liquid fæces came away. The orifice of the intestine was attached to the anterior angle of the wound by four sutures.

"No ill effect whatever followed the operation. Its success was not compromised by the supervention of any local accident, and on the 18th of June last, that is, sixteen days after the operation, the patient was in the enjoyment of excellent health. Within the last few days she has resumed her ordinary occupation; and the fæces are discharged two or three times in the twenty-four hours." —*Lancette Française*, June, 1839.

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37. *Traumatic Paralysis of the Arm.* By M. Blandin.—A soldier, 35 years of age, had the misfortune to dislocate his arm at the shoulder-joint: the luxation was easily reduced; but a complete paralysis of the entire extremity was the consequence. M. Blandin ordered frictions with a stimulating embrocation at first, and then successive blisters over the course of the brachial plexus, the vesicated surface to be dressed with a solution of strychnine. After the fifth blister, a manifest amendment ensued, and M. Blandin advised a repetition of the same treatment, which ultimately proved quite successful.

Remarks.—The paralysis of the arm, following an external injury, presents itself under several forms:

1. The lesion may have affected only the *circumflex* nerve of the deltoid muscle. When this is the case, the paralysis is limited to the shoulder-joint alone, and the patient cannot raise the arm, but all the other parts of the limb retain their normal integrity. This lesion may be the consequence of a direct injury of the joint, as a blow or a fall upon it. The most successful treatment of such cases consists in the use, after the immediate effects of the contusion

have been removed, of an embrocation composed of tincture of cantharides, ammonia, balsam of fioraventi and almond-oil,* to be rubbed night and morning upon the part. Sometimes, however, the paralysis resists this and every other remedy that can be devised.

2. The paralysis may be owing to a lesion of the brachial plexus in its subaxillary portion, in consequence of the dislocated head of the humerus pressing upon it. When such is the case, the patient experiences a sharp pain at the time of the accident; and the pain is usually accompanied with a sensation of cold and formication in the limb, which has already become quite powerless. A treatment, similar to what we have recommended in the former instance, will often succeed in removing the complaint.

A copious eruption of painful pustules on the part, induced by the application of some strong liniment, seems to be often of great use in traumatic paralysis.

Most surgical readers are aware that the dislocation of the joint is extremely apt to recur, as long as the weakened state of the surrounding muscles continues.

3. The source of the traumatic paralysis of the arm is sometimes seated at the origin of the brachial nerves. The efforts to reduce a dislocated limb, if too violent, may cause a lesion of the roots of these nerves; and the consequence of this lesion may be a sort of rachidian apoplexy or a violent myelitis, which has on several occasions proved fatal. Works on military surgery record many cases of this lesion, arising from gun-shot contusions.

Even under such unfavourable circumstances, as those to which we have now alluded, the well-directed efforts of the surgeon have often succeeded in restoring the use of the limbs. If the use of stimulating embrocations and of blisters prove inefficacious, Baron Larrey very strongly recommends the repeated application of the moxa along the whole *trajet* of the affected nerves. The recent experience of M. Baudens at Algiers quite confirms the statements of the Baron.

The endermic use of strychnine at the same time affords us a *veritable richesse nouvelle* in the treatment of such cases. With respect to this powerful remedy it deserves to be noticed that, if the vesicated or ulcerated surface be covered with any coagulable lymph, there may be little or no effects produced by its application.—*Med. Chirurg. Rev.* from *La Lançette Française.*

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38. *Means of repressing Hemorrhage from Arteries.*—Prof. Macartney stated to the Medical Section of the British Association, at their recent meeting, that he had been induced to try the effects of metallic ligatures, from observing that such substances frequently remained in the body without exciting any uneasiness, whilst the ordinary ligature fails from the injury and consequent inflammation excited by it. On applying ligatures of leaden wire to the arteries of dogs, he found, after death, that they remained, *in situ*, without surrounding inflammation, or were removed by intestinal absorption, the arteries being impervious. The same results were observed when the experiment was made on the jugular vein of rabbits. An improvement was made by Mr. Weiss on the leaden ligature, by substituting soft metal wire, capable of being knotted.

Long since the late Prof. Physick suggested the use of leaden ligatures, and eleven years ago a number of experiments were tried with them by Dr. H. S. Levert, of Alabama, and an account of them was published in the No. of this Journal for May, 1829.

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39. *Local use of Iodine.*—Mr. John Davies, of Hertford, states that he has treated certain very troublesome ulcers which often form within the cavity of the mouth, attacking and destroying the tonsils and velum palati, with almost uniform success, by the tincture of iodine, daily applied with a brush all over the ulcerated parts.

In scrofulous swellings, he asserts that "the tincture of iodine applied over

* The late Baron Boyer was much in the habit of prescribing this formula:—R. Balsami fioraventi ℥iv.; tinctura lyttæ ℥ss.; liquor. ammoniæ dil. ℥ss.—Misce, fiat liniment.

the enlarged gland, will much more frequently cause a dispersion of the swelling than any other remedy. If resorted to before suppuration has actually commenced, and used with discretion, it will, in the majority of cases, check the swelling, and will ultimately promote the absorption of the morbid deposit. The same remarks will apply to these swellings as to common boils: even when suppuration is begun, before recourse is had to the tincture, or when it has taken place in spite of the tincture, still the application of the iodine is highly beneficial in limiting the extent of the abscess, thereby limiting the size of the scar which is to follow. Moreover, when the swelling has burst, an occasional touch of the remedy will be found materially to accelerate the cicatrization of the sore. Mr. D. has usually succeeded also in checking the progress of the ulceration in chilblain by two or three applications of the tincture of iodine. He applies the remedy, in its full strength, to the distance of some inches beyond the boundary of the inflammation, and repeats it daily for some time. He also directs the affected parts to be immersed every night in water as hot as the patient can bear. When the ulcers have assumed a healthy aspect, and the surrounding skin has lost its dark, limpid, unhealthy colour, the strength of the tincture may be reduced, and its application repeated every two or three days only, until the ulcers are healed. The ulcers should be painted over with the tincture each time of its application, and then dressed with any simple ointment, or, in preference, ointment containing some resinous gum.—*Lancet*, July 13, 1839.

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40. *Reduction of Hernia.*—Mr. Sawlins relates in the Lancet (6th July, 1839) a case of strangulated crural hernia, in which the taxis was tried for some time without success. He then introduced a stomach tube per anum its whole length, when a great quantity of confined air escaped, the tumour gradually relaxed, and shortly afterwards, on Mr. S. putting his hand upon it, the hernia was reduced.

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41. *Treatment of Lateral Deviation of the Spine, by division of the muscles of the back.*—M. Jules Guerin, editor of the "French Medical Gazette," who is, perhaps, the first authority in France on all points connected with deformities of the muscular or osseous system, has recently addressed the following letter to the Academy of Sciences, on a new mode of treating lateral deviations of the spinal column:—

I have the honour of acquainting the Academy with the first results of a new operation which I have performed in twelve instances, with success, on patients affected with lateral deviation of the spine. The operation consists in dividing certain muscles of the back and spinal column. Those which I have divided up to the present moment are the trapezius, rhomboideus, levator scapulæ, sacro-lumbalis, longissimus dorsi, and inter-transverse muscles.

I have already demonstrated, in another work, that the majority of the deformities which affect the joints depend on spasmodic muscular retraction, the result of some affection of the nervous centres, or of the nerves distributed to the muscles. This proposition, which has been shown to be generally applicable to deformities of the neck, spine, hip-joint, wrist, and ankle-joint, &c., naturally led to the deduction of two corollaries—

1. That the various species of deformity which affect the joints, &c. depend on muscular retraction, affecting variously the different muscles.

2. That the active treatment of each deformity should consist in the division of the muscles or tendons whose retraction gave rise to the specific deformity.

To obtain, however, the object in view, it was necessary to determine with precision the muscles on the retraction of which each deformity might depend; and, on the other hand, show, by actual experiment, that the theory was correct; or, in other words, cure the deformity by the section of the muscles supposed to be affected. This I have done in cases of wry neck, and in the different varieties of club-foot, and having extended the practice to lateral deviations of the spinal column, I have demonstrated the truth of the two following propositions:

1. The majority of lateral deviations of the spine depend on active muscular

retraction, and their anatomical varieties are but the expression of this retraction occurring in various degrees in the muscles of the spine and back.

2. The active treatment of this order of deformities should consist in dividing (underneath the skin) the several retracted muscles.

The operations which confirm my theory, were performed on individuals of both sexes, and of different ages; the youngest being thirteen, the oldest twenty-two years of age. The deviations had all arrived at the second or third degree, with torsions of the spine, and proportionate gibbosity. In some cases, a single section of the retracted muscles was sufficient for the cure; in others I was compelled to operate two or three times. In all cases I obtained immediately after the operation a well-marked degree of straightening of the spinal column, and in one case, that of a young man, twenty-one years of age, who had been treated mechanically for the last eighteen months, the deviation *immediately* disappeared after the division of the longissimus dorsi and corresponding inter-transverse muscles. In all the other cases I was enabled to complete the cure by mechanical means, and my success was constant. In the twelve operations which I have performed, no accident of any kind occurred; there was no hæmorrhage; but little pain; no fever; and in all except one, union of the wound by the first intention was obtained.—*Lancet* and *Gazétte Méd. de Paris*, 20th June, 1839.

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42. *Efficacy of Iodide of Arsenic in the cure of Cancer.*—We transfer to our pages, from the *Lancet* of 31st Aug. 1839, the following account, by Dr. F. C. Crane, of a cure of a cancerous disease of the breast, though we must confess we repose little confidence in any means of cure of *genuine* cancer.

"M. H., ætat. 29, in the early part of November, 1838, presented herself to me with disease of the right breast; by her own account she had received a blow upon it from the clenched hand of a person in play, about eight or nine years ago, since which time she had occasionally experienced lancinating pains in it. Had been married nine years, but borne no children.

"In the last two years the breast had increased much in size, and become very sensitive to the touch, and pressure of clothes. She felt several distinct swellings in the breast, accompanied by severe shooting pains, extending to the arm-pit, and down the corresponding arm, affecting her constitutionally, making her weak, and extremely uneasy in her mind. Had shown the breast to several medical gentlemen, who told her it was cancerous disease. Had been advised to go into the public hospital to have the breast removed.

"The symptoms, on her presentation to me, were, sallow complexion, anxious countenance, much feverish heat, great sense of debility and declining strength, as though the constitution was giving way; loss of appetite, severe pains at the pit of the stomach, right breast much swollen, and tender to the touch; great increased heat, with several distinct internal tumours, varying from the size of a hazel-nut to that of a small walnut. The veins under the skin were knotty and thick, with a sensation of a stringy connection to the arm-pits, as though so many tense chords attached the swelled breast to the arm. The pain consisted of sharp lancinating throbs, shooting into the arm particularly, but affecting the chest generally; was a good deal subservient to the change of weather as respects pungency, but otherwise the pains were constant. Could not lie on her right side. The opposite breast was quite natural in size, appearance, and feel, but she occasionally experienced a lancinating pain in it, as though proceeding from the right breast.

"I felt fully convinced that this was a case of cancer in an advanced state, and hesitated not a moment in placing her under the treatment of the iodide of arsenic, as recommended by Dr. A. T. Thomson, in his paper read at the Medical Section of the British Association of Newcastle, in August, 1838, and reported in The Lancet.

"She was kept under the treatment steadily for nearly eight months, with gradual and eventually a perfect disappearance of the tumours and an absence of all pain, with generally improved health and strength. In the beginning of June, I considered her perfectly cured; she discontinued her medicine, and took

leave of me. I saw her again a few days ago, it being two months since she had taken any medicine whatever; she then expressed herself free from all pain in the breast, and is enjoying a better state of health than she ever recollects to have done previous to the treatment.

"I should observe that the dose of iodide of arsenic was an eighth of a grain, which was reduced to a twelfth, and gradually increased to a third of a grain, beyond which it could not be borne. However, in a case of inveterate common leprosy (lepra vulgaris) the same remedy was carried to the extent of one grain to the dose, with the most decided advantage and curative effects. Of this case I will forward to you at some future period an account, as also of a case, successfully treated, of extensive carcinomatous disease (open cancer), extending over the lower part of the abdomen (including part of the left iliac and inguinal regions); likewise a case of the removal of a large tumour with cyst of melanotic contents, both by the agency of the chloride of zinc."

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43. *On the apparent lengthening or shortening of the Limb in Injuries and diseases of the Hip.*—M. SEDILLOT, one of the surgeons of the Val-de-Grace Hospital at Paris, has published a very valuable practical paper on the difficulties of diagnosis in some cases of injury about the hip-joint, which we now propose to condense for the benefit of our readers.

He remarks—"the deviations of the pelvis, so common in diseases of the hip-joint, have been studied with great care of late years; and it is now admitted by all surgeons, that the *apparent* elongation of the limb on the affected side is generally owing to this cause (pelvic deviation), and not, as was formerly supposed, to a partial dislodgment of the head of the bone from its socket.

It has been also ascertained that the deviation is not always from above downwards, but is occasionally from below upwards; in which latter case the limb, instead of seeming to be elongated, appears to be shortened; although, in truth, its real length is not altered.

The attention of surgeons having been thus directed to these points, a great improvement in the history of hip-joint disease has been introduced of recent years; but the pelvic deviations, caused by a sudden blow or contusion upon the haunch, have been rather neglected; although they deserve particular consideration, seeing that such accidents are exceedingly apt to be mistaken either for fracture of the pelvis or of the cervix femoris, or for some dislocation of the hip-joint—mistakes which might prove most serious both to patient and surgeon.

The following case may be adduced in proof.

A young robust man fell upon his right haunch and hip, while coming down a flight of stairs: his right foot, being caught under the balustrade, prevented him from slipping down the stairs. He heard a sharp crack at the time, and he thought that he must have broken his limb. He rose, however, without assistance, but he could not rest the foot of the injured side upon the ground. A surgeon, who was immediately called to his assistance, finding that the limb was shortened and could not be moved but with difficulty, considered the case as one of dislocation of the hip upwards and outwards; extension was therefore employed for some time, but without any benefit.

Next day a consultation was held: the patient lay on his back; his right thigh was somewhat bent upon the pelvis, and drawn out or abducted from the other, so that the two knees were about a foot apart; the right leg was bent upon the thigh and drawn inwards, the heel being on a level with the middle of the left leg. While in this position the patient was free from pain; but he could not change it without great suffering.

Some of the medical men considered the accident to be a dislocation, while others regarded it as fracture of the neck of the thigh bone. It was therefore necessary to study the various symptoms with peculiar care.

When the two limbs were extended and brought together, the right one was found to be about an inch and a half shorter than the left one; no traction could bring the heels on a level with each other. When the knees were bent upon the thighs and brought together, the same degree of shortening of the right thigh

was observed, in whatever position the pelvis was attempted to be placed. The great trochanter on the right side was more elevated than that on the left; the superior and anterior spinous process of the right *os ilii* also was an inch and a half, or so, higher than the corresponding process on the other side. Wherever therefore the measurement was taken, the right limb always seemed to be shorter by upwards of an inch than its fellow. The distance of the right trochanter, however, from the crest of the *os ilii*, was observed to be uniformly the same, whatever was the position in which the limb was placed.

With respect to the direction of the foot on the injured side, it was, as already mentioned, rotated somewhat outwards; but the patient still retained the power of rolling it round and even inwards. He could also, while lying in bed, extend and raise the entire limb. The flexion of the thigh on the pelvis could not be carried beyond a right angle; adduction was difficult, but abduction was free and without uneasiness.* In the upright position, the patient rested rather on the heel than on the toes of the affected limb. The right shoulder was observed to be decidedly lower than its fellow, and the left side of the body was *legerement arqué.*

The patient experienced considerable pain when pressure was made over the hip-joint, and when the limb was rolled inwards and adducted; but very little when abducted. When he lay flat on his belly, the line of separation between the buttocks was sensibly inclined from right to left, and from below upwards.

Such were the most conspicuous features of the present case; and the question now came for consideration, what was the real nature of the injury present?

That the shortening of the limb was not owing to fracture of any part of the thigh-bone, M. Sedillot inferred from the circumstance that, although the foot on the injured side was drawn up about an inch and a half or so, and thus the limb *seemed* to be shorter than its fellow, the distance between the knee-joint and any point of the pelvis was exactly the same on both sides: this could not possibly be so, if one thigh were in reality shorter than the other. The distance too between the trochanters and the ant. sup. spinous processes of the ileum was steadily the same.

The free mobility of the limb also, although when left to itself it was turned outwards, and the power which the patient had of moving it in several directions were arguments against the idea of fracture of the cervix femoris being present. Still it should be well remembered by the surgical reader that, in some cases of such fracture, the patient has at first, and even for several days after the accident, retained the power of moving his limb, nay, has even walked for some distance, and yet the distinctive character of the injury—viz. shortening of the limb, rolling of the foot outwards, crepitation when the limb is extended and turned round, pain, &c.—have not made their appearance for a day or two. The explanation of such an occurrence is probably to be sought for in the circumstance that the fractured ends of the bone remained in contact at first, and that they were not separated until either the investing periosteum was torn, or the surrounding muscles had begun to contract more powerfully than before.

The age too of the patient, in the present case, naturally suggested a suspicion that the neck of the bone was *not* fractured. Of 225 cases of this accident, alluded to by Sir Astley Cooper, in two only was the age of the patient under fifty years.

M. Sedillot therefore felt satisfied that the case was not one of fracture. That it was not one of dislocation, he inferred from the circumstance of the distance between the great trochanter—although it was very projecting—and the crest of the ileum being the same on both sides, from the comparative facility of movement, more especially that of abduction, in the limb, from the trochanter not

* During these movements, a rubbing noise, *un bruit de frottement*, was audible; it was considered by some to be the crepitation of two broken surfaces, but M. Sedillot was of opinion that it was owing rather to the friction of fibrous surfaces one upon the other, or to slight articular shocks.

describing a larger arc than usual when the limb was rotated, and from the turning of the foot outwards.

Dwelling upon these and other considerations, he came to the conclusion that the case was merely one of severe contusion inducing a temporary lateral diviation of the pelvis. We have already stated that, whenever the hip is the seat of pain, the pelvis on the affected side very generally becomes elevated and inclined over somewhat to the opposite side, for the purpose no doubt of relieving the weight of the limb and of the pressure of the foot on the ground. The shortening of the limb in such a case is only apparent; and this fact may always be readily ascertained by means of measurement with a piece of tape, as already alluded to.

It is not improbable that, along with the contusion of the pelvis, there was also a sprain of the hip-joint; perhaps some of the ligamentous and muscular fibres around it partially torn, or even a portion of its articular cartilage broken off. When such accidents are present, the symptoms of the case will necessarily be more obscure, and will similate more exactly those of dislocation of, or fracture near to, the joint.

We have nothing to say as to the treatment of such injuries, as this must, as a matter of course, consist in rest, the application of leeches, and so forth. Should the deviation of the limb continue, after the immediate symptoms of the accident are removed, it may be necessary to resort to the use of mechanical means.—*Med. Chirurg. Rev.* from *L'Experience.*

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44. *Lithotrity.*—M. Leroy D'Etioles has recently relieved the celebrated Parisian surgeon, M. Sanson, of stone, by this operation. It is said that there were great difficulties in the case, but they were happily surmounted. M. Sanson did not interrupt his consultations for a single day during the treatment. Three of the most eminent of the French surgeons, Dubois, Lisfranc, and Sanson, have thus given the strongest evidence in their power, of the value of this operation by submitting to it themselves, and giving a preference to it over lithotomy.

OPHTHALMOLOGY.

45. *New Instrument for the removal of a certain form of Capsular Cataract through the Sclerotica.*—Richard Middlemore, Esq., the distinguished surgeon to the Birmingham Eye Infirmary, has recently invented an ingenious instrument for the removal of capsular cataract through the sclerotica, where the opaque capsule remains after the absorption of the lens. This instrument consists of a fine, spear-shaped needle, the sides of which, very nearly at the point, are embraced by the branches of a fine pair of forceps, so as to form a perfectly smooth continuous instrument, admitting of very facile introduction through the tunics of the eye. The spear-shaped needle is so contrived, as to be readily retracted after having punctured the sclerotica, and introduced the forceps; and the forceps open, by slightly pressing a button. When the opaque membrane—the capsular cataract—is seized, the mere closure of the forceps is considered to be sufficient to secure its removal; but it is very easy to increase the pressure, if necessary, to secure the more firm hold of the opaque membrane, it is the object of the operator to seize and withdraw.

The inventor has done us the honour to transmit a drawing of this instrument; which we regret came to hand too late, to allow of its being engraved for this No. of the "Journal."

The following extract from a letter, which accompanied the drawing, will fully explain the views of that gentleman, as to the application of his instrument:

"I will now describe, very briefly, one or two morbid conditions of the eye, to the cure of which my new instrument is adapted. You are aware that, if

ordinary congenital cataract be allowed to continue until the subject of this defect has arrived at, or towards, adult age, certain important changes take place: for instance, the lens is absorbed, the anterior and posterior hemispheres of the capsule become thick and opaque, and either fall into apposition, or become united by an organized medium. You also know that if, in performing the anterior or posterior operation of solution, the anterior capsule be imperfectly lacerated by the point of the needle, the capsule will remain, as a thick, tough, somewhat elastic, and opaque body, and will, probably, contract adhesions to the iris. I will just tell you, what are the modes of attempting the cure of this form of disease which are practised in this part of the world. Some operators pass a curved needle through the sclerotica, puncture, and attempt to depress the opaque capsule, by twisting it round its curved point; others, content themselves with merely transfixing it, by passing the needle through the centre of the opaque membrane; others, again, prefer to make a small section of the cornea, through which they introduce a fine hook, and endeavour to seize and withdraw the opaque capsule. I need not tell you, that all these modes are open to many objections. To the first method it may be objected, that membranous cataract can only be removed from the axis of vision, by being very firmly twisted round the point of the curved needle, which it is very difficult to do, and which, when thoroughly done, almost always produces an effusion of blood, which much embarrasses the after-steps of the operation; and moreover, renders it extremely difficult to remove the membrane from the needle, until an attempt be made to withdraw it through the sclerotica, when, indeed, it is certainly removed, but very generally floats back to its former situation. As to the second operation to which I have alluded, I need scarcely tell you, that it is almost impossible, by the aid of any needle it is prudent to employ, to make an aperture in the capsule large enough for the transmission of a sufficient quantity of light for the purposes of useful vision. The third method is also objectionable: In the first place, it is always extremely difficult, and sometimes absolutely impracticable, to introduce a hook through a small opening in the cornea in an eye, rendered unsteady by the irritation the section of that membrane has produced. Again, the iris is very liable to be hooked, and, even if the fine hook be fixed in the opaque membrane, it is very prone to 'tear itself out.' If to these circumstances, be added the risk of inflammation of the iris, and of opacity and staphyloma of the cornea, I think it will be considered, that any operation which may be proposed, which is, at least, as efficient as those just mentioned, and which is not liable to any of the preceding objections, is entitled to our attention.

"*Mode of Using the Instrument.*—The needle is to be introduced through the sclerotica, a little above the greatest horizontal diameter of the eye, and rather more than two lines from the margin of the cornea, until its point is pushed through the opaque capsule; it is then retracted, by touching a spring, leaving the forceps in the eye, the blades of which are expanded, and, by a little appropriate manipulation, are made to seize the opaque capsule, which is then withdrawn with the forceps, through the sclerotica. It appears to me, that the advantages of this mode of removing the variety of capsular cataract, under consideration, are great and manifold: in fact, I think we may very fairly say, that it promises to be fully effective; that is, to remove the disease, wholly and entirely, without any great risk of inflaming and lacerating the iris, or of rendering the cornea opaque or staphylomatous. However, I will have some of the instruments constructed; and will convey one of them to you, together with three copies of my work, which I will get you to present, in my name, to those public, or other libraries at Philadelphia, which you may conceive best entitled to this humble act of attention on my part."

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46. *On the Use of the Conium Maculatum in Scrofulous Ophthalmia.*—Kopp, of Hanau, recommends for scrofulous ophthalmia the conium maculatum. His formula is: R. ext. conii maculati ʒj., aquæ cinnamomi spirituosæ ʒj.—Solve. Of this he gives children of two or three to four years old, and older, four drops

three times a day, daily adding a drop to each dose. Blisters behind the ears, and compresses, wet with tinct. thebaica, to the eyes were at the same time used. Professor Otto says he has cured more than thirty cases of scrofulous ophthalmia by this plan. He has, with Kopp, raised the doses as high as thirty to thirty-five drops without any bad result.—*B. & F. Med. Rev.* July, 1839, from *Wochenschrift für die ges. Heilkunde*, April 6, 1839.

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47. *Development of Hair in the Posterior Chamber of the Eye.* By Dr. T. Ruette, of Göttingen.—This was the case of a man thirty years of age, by trade a tinker. On the cornea, which was in other respects quite natural, there was a slight cicatrice; the anterior chamber natural; the iris appeared unchanged in structure, but its pupillary margin was, to the greatest part of its extent, adherent to the capsule of the lens. The latter was opaque, and appeared to have several fissures in it. But the most remarkable thing was the appearance of four hairs behind the pupil, two longer and two shorter. They sprang out of the bottom of the posterior chamber, from the capsule of the lens. Besides these, a still longer hair pierced the iris to the left of the pupil, and lay stretched on the iris in the anterior chamber. This state was traced to an injury from a chip of tinned iron, which struck his eye in an incandescent state, three years ago.—*Ibid.*, from *Monatsschrift für Med. Augenheilkunde und Chirurgie, Jan. and Feb.* 1839.

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48. *Luminous appearances in the Eyes.*—M. Savigny has for fourteen years suffered from such violent neuralgia in the eyes, that he has been constrained to remain in perfect darkness for the whole of that period. This darkness does not appear such for him, for the appearance of light, which, unfortunately, has a continual source in his eyes, incessantly fills the whole space. Lately, M. Savigny has made the following communication to the Academy on this subject:—

Every one who passes his finger on the ball of the eye, near the inner angle, produces in the dark a little circle of light, which appears at the external angle. These luminous appearances (phosphoric) are from eight to ten lines in diameter, never appear of themselves, and always are seen about the edges of the eye. Those seen by M. Savigny appeared under three forms, each of which assumed other forms. In the first, the appearance was circumscribed, circular, simple, or manifold; in the second, like a torn or shredded piece of cloth, or as a long band on the upper border of the eye; in the third, the appearance consisted in a single circle of many feet diameter, formed by a simple line parallel to the edge of the eye, and which at a certain distance appeared to surround the entire countenance. Seven years after the access of these appearances, in the year 1832, they increased much in intensity with regard to size, conformation, multiplicity, and brilliancy. The circular appearance had sometimes a diameter of from six to ten inches, were simple or festooned on their borders, sometimes of the colour of raw silk; or white, with silver or brilliant golden borders; sometimes yellow, orange, red, or black, with a broad border of gold or silver; sometimes they had the appearance of many concentric circles, with concentric undulations of the greatest fineness and most splendid brilliancy. The largest and most brilliant appearances were on the marginal parts, and frequently terminated above in a kind of cupola. The more crowded the figures were, the more they lost in splendour, colour, and distinctness of outline. At first they only appeared from time to time, but now almost daily, and it only required simple contraction of the eyelids to produce them. Their size, form, colour, and brilliancy depended for the most part on the altered position of the organ. When this phenomenon is produced by the pressure of the finger, the way in which the pressure is exercised has an influence on the kind of appearance. When the finger is pressed from the inner angle of the eye towards the outer, the luminous appearances are seen in exactly a contrary direction, and appear on all points of a large curve above the eye, which sometimes reaches as far as the other eye, but generally only reaches as far as the middle line. If, along with this pressure, a retrograde motion is made, the appearances are increased more or less, but they

rise or sink in a quick and confused manner on the curve we have described. In general, when the pressure is firm, the appearance is larger, more regular, and more vivid; when the pressure is uneven, wavy, and irregular. The luminous appearances generally begin and end with the pressure; but applying the pressure very frequently diminishes the power of producing these appearances.—They always made their appearance when M. Savigny, wearied with the intolerable pain caused by congestion, pressed upon the bandage which covered both his eyes, in order, by pressure, to assist the eyelids in effecting the emptying of the vessels.—*Dublin Journ.* July, 1839, from *Archives Générales*, Aug. 1838.

MIDWIFERY.

49. *Induction of Premature Labour by Ergot.*—Dr. James Patterson, of Glasgow, relates in the *Lond. Med. Gaz.* (8th Sept. 1838, and 1st June, 1839,) a very interesting case in which he was twice under the necessity of inducing premature labour, in consequence of considerable deformity of the pelvis, and effected this object by the administration of ergot.

The subject of this was a Mrs. Brown, ætat. 29, who had borne eight children. "Her first labour was comparatively easy, but every succeeding one became more difficult and dangerous, in consequence of the pelvic bones gradually encroaching on the cavity and outlet of the pelvis. The first three children were born alive; the fourth required the forceps, and was dead; the fifth, though remarkably small, likewise required the forceps, and was born in a state of asphyxia, but, by proper treatment, recovered. In the sixth I attended her, and, on a careful examination, found that the conjugate diameter of the pelvis did not exceed three inches, so that after a tedious and most painful labour, being unable to deliver her with the forceps, I was obliged to perform embryotomy, after which she was delivered of a very large male child. She recovered well, soon afterwards became pregnant, and allowed herself to go to the full period of gestation. A surgeon attended her, who, finding it impossible to deliver her in the natural way, or with the forceps, was obliged, with the assistance of another surgeon, to break down the head. From the effects of this confinement, she recovered slowly, and was ever afterwards afflicted with an extensive vesico-vaginal fistula. Independently of her misfortune and her former sufferings, she again was pregnant, and consulted me in the fourth month, when I advised her, for her own safety, and as the only chance which remained for the preservation of her infant, to have labour induced in the seventh month of utero-gestation. She agreed to this, and I was fortunate enough to accomplish it by means of the following:—℞. Pulv. secale cornut. ʒss., aq. bull. ʒxxiv., syrupi simp. ʒj. M. Two ounces of this infusion were exhibited every third hour, and after this quantity was finished, other two drachms were prepared in the same way, and given at shorter intervals; so that altogether she took six drachms of the medicine, and the time occupied from the first administration to the birth of the child, which was alive, was thirty-nine hours and fifteen minutes."

This patient having again nearly completed the seventh month of utero-gestation, on Monday, 29th of April, Dr. Patterson commenced the operation a second time of inducing premature labour. "The bowels were freely evacuated in the forenoon with the pil. colocynth. comp.; and at 10 o'clock, P. M., she had ʒss. of the pulv. secale cornut., prepared as in her former case, administered in the same doses and at the same intervals of time. When twenty-four hours had elapsed, little effect was produced, with the exception of a feeling of weight about the loins, and a slight tendency to bearing down. No impression was made on the os uteri, nor had there been any thing like distinct pains. On Wednesday, the 1st of May, at 12 o'clock meridian, there was still little alteration; and, as there had been no motion of the bowels since Monday, she had a couple of colocynth pills, which operated mildly. Her infusion being done, I divided an ounce of finely pulverised secale into sixteen powders, and ordered

one to be taken every second hour, after being macerated in boiling water for twenty minutes. Slight uterine pains followed the administration of the second dose, and, at 8 o'clock, P. M., the os uteri was dilated sufficiently to admit the point of the finger. I made no attempt to ascertain the presentation, lest the effort should separate the membranes, and thus interfere with the intended action of the medicine.

"Thursday, 11 o'clock, A. M.—During the night she had frequent pains, but only attended with slight bearing-down; and, on examining, I now found the neck of the uterus more obliterated, the os uteri softer, and dilated above an inch; the membranes felt distended with the liquor amnii, but the child had not yet entered the pelvic cavity.

"9 o'clock, P. M.—Has taken all the powders, and is much in the same way as in the morning. She feels the motion of the child very lively. Seeing that labour was not likely to be speedily effected with the quantity of medicine she had taken, I infused ten drachms of the secale in twenty-four ounces of boiling water, and of this she took two ounces every third hour.

"On Saturday, at 11 o'clock, A. M., there was little further perceptible change, and I almost despaired of accomplishing the desired object by the efficacy of the secale cornutum alone. As she had taken two ounces and six drachms, I considered it would not be proper or justifiable to push the medicine further, without having the opinion of some other practitioner on the subject. I, therefore, called in an experienced medical friend, who examined minutely into the state of the patient's feelings, in order to ascertain if she found any ill effect from having taken so much secale. Her strength being good, her pulse regular and calm, her appetite not at all impaired, and as she said that she did not experience the slightest inconvenience, there being nothing to contra-indicate the practice, with the view of giving the medicine a complete trial, we agreed to prepare other ten drachms as before, but to give it in rather smaller doses, and at intervals of two hours. At 4 o'clock, P. M., she commenced taking it as prescribed, and in a few hours was conscious of stronger pains and more bearing down. By 7 o'clock on Sunday morning, this infusion was finished, but owing to my being engaged with two other accouchments, I was prevented from seeing her till 2 o'clock, P. M. Pains had then left her for some hours, though, on examining, I found the os uteri very low, dilated to the size of a crown-piece, soft, and yielding readily to the fingers. The presentation, which was a footling, could be easily made out through the membranes, which protruded from the os uteri. Since I saw her last, she had enjoyed a most refreshing sleep, and had taken her breakfast heartily.

"It was now evident that a termination of the labour could not be far distant, and that it only required a regular and quick succession of pains to accomplish this much longed for event. I waited for two hours, trusting that nature would soon establish her own process, and thus, without further interference, effect the expulsion of the child; but not the slightest symptom of a pain occurred, and the patient seemed anxious that I should do something. From the generally relaxed state of the parts, and the progress she had made, I considered it likely that another dose of the secale cornutum would in all probability excite the uterine contractions. I infused two drachms, and gave her the third part of it at 4 o'clock. In fifteen minutes a pain ensued; in twenty minutes another; and at the half hour she had a good bearing-down pain. They now continued regular and effective. At 5 o'clock, the membranes protruded from the vulva; but I endeavoured to prevent them giving way as long as possible, in order that the liquor amnii might save the child from severe pressure till it had reached such a position in the pelvis as to be easily extracted after the discharge of the waters. At fifteen minutes past 5 o'clock, they gave way during a pain, and a considerable quantity of liquor amnii was discharged. One of the feet came into the vagina; and, on carrying up my finger, I found the other foot and leg resting on the symphysis pubis. I brought it cautiously down, and, after doing so, found that the breech was firmly wedged in the superior cavity of the pelvis, with the back directed towards the mother's abdomen. The child was lively, and

moved the legs freely; but, on trying to assist it down, I discovered that the funis had unfortunately got round the thigh, and passed between the legs up the back, so that the child might literally be said to be riding across it. I did all in my power to rectify this untoward event; but, from the diminished capacity of the pelvis, it was impossible to carry the hand sufficiently high to enable me to do so. I had recourse to the only alterative, of supporting the child so as to save the cord as much as possible from pressure. Immediately after the evacuation of the amniotic fluid, the uterine contractions became weaker and less frequent, so that twenty-five minutes elapsed before the body passed through the upper cavity. I then got the thigh disentangled from the funis; but, I am sorry to say, by this time the umbilical pulsation had entirely ceased. As it could serve no purpose now to prolong the labour, and the pains being slack, I administered the remainder of the secale at fifteen minutes to 6 o'clock. In a few minutes its action commenced, and capital pains followed; but independently of this, and all the efforts I could use, the head was not expelled till twenty-five minutes past 6 o'clock, P. M., being five days, twenty hours and twenty five minutes from the first exhibition of the secale cornutum, the patient having swallowed no less than thirty-four drachms of the medicine.

"May 6th.—Has had almost no after-pains, and slept several hours last night; lochial discharge free; feels no complaint.

"9th, 2 o'clock, P. M.—Milk has been plentifully secreted; is already up, and taking charge of her household affairs. Dismissed."

Mr. Heane, of Gloucester, has recorded in the *Lond. Med. Gaz.* (26th of Jan. 1839,) another case in which premature labour was successfully induced by the same means. The patient, Harriet Sander, was 43 years of age, had been pregnant thirteen times, and had six of her children still-born, five of them having been destroyed by the perforator. The preparation of the ergot, and the mode of administration, were the same as employed by Dr. Patterson.

These cases are interesting, as they seem to justify the conclusion, that the administration of ergot is often of itself sufficient to induce premature labour, and also that a very large quantity of the drug may be given without producing any bad effect on the mother or child.

Whilst Dr. Patterson claims for the ergot this power of inducing premature labour, he, however, denies that it is an abortive, as will be seen from the following extract:—

"That inducing premature parturition is an unnatural process, no one can justly deny; and I believe that the earlier the period in which this is attempted, there will be the less likelihood of success—at least by the agent I have employed. It has been supposed that if the secale be found efficacious in strengthening the uterine contractions in natural parturition at the full period of gestation, it will likewise be effectual in the early months of pregnancy, and thus be had recourse to for the base purpose of procuring criminal abortion. Chapman,* Goupil,† Pelletier,‡ and Planche, Gerardin,§ Guibert, Lorinser, Waller, and several others, have entertained this opinion; while Steanns,‖ Wesener,¶ Villeneuve,** Chatard,†† Dr. Hall of St. Albans, one of the greatest declaimers against the use of the secale in any circumstances, Michell,‡‡ and last, but not least, my respected teacher, Dr. Burns,§§ with a host of other more modern writers, might be adduced, who deny its powers as abortive. Several well

* Vide Treatise on Therapeutics, 3d. edit. Philadelphia, 1824.
† Nouv. Bibl. Méd. tom. iii. 1826.
‡ Gazette de Santé, 1826.
§ Med. and Phys. Journ. London, vol. iii.
‖ New York Med. Repos. 1808.
¶ Le Journal de Hufeland, apud. Bibl. Méd. tom. lxii. 1818.
** Bibl. Méd. tom. lxxii.; Gaz. de Santé. Paris, 1819.
†† Med. Repos. vol. v. New York, 1820.
‡‡ Difficult Cases of Parturition. London, 1828.
§§ Principles of Midwifery.

authenticated circumstances have lately come under my notice, which, taken into consideration with numerous experiments made upon the lower animals, go far, in my opinion, to prove that this medicine can by no means be regarded as an abortive; though, from these circumstances and experiments, I am not as yet prepared to draw a line of demarcation as to the exact period when it may be said to act, as it were, specifically upon the gravid uterus.

"The history of the present case shows that a vast quantity of the medicine may be taken with perfect impunity to the mother and her offspring. I have never, in the course of my reading, met with an instance where so much of the medicine was given to an *enceinte* patient; but, from the moment she partook of it, to the period at which I write, she has not experienced the slightest unpleasant symptom, nor, indeed, have I ever observed any bad result from the use of the secale cornutum."

Dr. P. very justly cautions practitioners against the indiscriminate use of the ergot. "It may be said," remarks Dr. P., "that Mrs. B.'s case will afford a dangerous precedent for young practitioners in protracted labours at the full period of gestation. I wish it to be distinctly understood, that I deprecate the indiscriminate use of this medicine; I hold it as an invaluable boon to the obstetrical department of the profession, but its employment requires the utmost caution and discrimination. No one is warranted to give it without fully understanding the whole mechanism of parturition, and the general principles of labour; and even then its administration can only be admissible after the progress of the labour, with the presentation of the child, have been ascertained to be favourable."

Dr. Francis H. Ramsbotham has employed the ergot for the induction of premature labour very extensively, (26 cases,) and in but very few instances was administered without effect; but, he states, that in his hands in comparison to the number of cases, more children were still-born after the exhibition of the medicine, than when premature labour was induced by puncturing the membranes. He hence concludes that ergot, when taken by the mother in large quantities, exerts a poisonous influence over the child.

With due deference to so high a surgical authority as Mr. Ramsbotham, we must still hold that any poisonous action of the ergot upon the fœtus remains yet to be proved.

From the report of Prof. Busch, of Berlin, (*Neue Zeitschrift für Geburtskunde*, vol. xv. 1837,) it appears that in 175 cases, where ergot was given on account of weak labour-pains, after the os uteri was well dilated, 177 children were born: of these 142 were born alive, 18 in a state of asphyxia, but by proper treatment recovered; and 17 were born dead. On examining these, it was evident that 7 had been dead for some time previous to the administration of the medicine; and of the 10 others, which died during labour, 2 lost their lives from prolapsus of the funis; 2 from turning; 1 from presentation of the nates; 1 from contracted pelvis and consequent impaction of the head; 2 from rigidity of the external parts; 1 from deformity of the extremities; and 1 from no very peculiar cause. Agreeably to this statement, therefore, only *one death* out of 177 births could properly be attributed to the employment of the secale cornutum.

Mr. Ramsbotham furnishes (*Lond. Med. Gaz.* 15 June, 1839,) the following summary of 62 cases in which he thought it expedient to induce premature labour, from the patients possessing too narrow a pelvis to admit a mature fœtus to pass through.

"In 36 cases, the membranes were punctured. 21 children were born alive; 16 were born still.

"Of those which were born still, 1 was a twin case, both children still; 3 were breech or footling cases; 2 were transverse presentations, requiring turning.

"Of those born alive, 1 was a breech case, the child never breathed freely, and soon died; 1 was a footling case.

"Four patients took the ergot with little or no effect:—1 took 10 drachms infused; 1 took 20 drachms infused; 1 took 24 drachms;—the child died in 48 hours, not in convulsions;—1 took 30 drachms infused.

"The other 19 children lived for a considerable period; many are alive at this time to my knowledge.

"In 26 cases the ergot induced labour without any other means being used.

"Of these, 12 children were born alive; 14 were born still.

"Of those born alive, 1 was a shoulder presentation; the child was turned, and the respiratory function was never perfectly instituted; 3 died within the hour, not in convulsions; 4 died of convulsions.

"Of these, 1 died in 6 hours; 1 died in 10 hours; 1 died in 16 hours; 1 died in about 36 hours.

"So that, of the 12 born alive, 4 only survived for any length of time.

"Of the 14 born still, 1 was a breech presentation. In 2, craniotomy was performed, the women being farther advanced than they had calculated on, and the children being too large to pass. One of these children was still before the operation; the other was alive at the time.

"The quantity each of these patients took, varied from 2 to 12 drachms, and they all had it given to them in the same form. Half a drachm of the powdered grain was infused for half an hour in an ounce and a half of boiling water; the *strained* infusion was exhibited, and the dose repeated every four hours.

"It is right I should add, that in no one case did the women suffer any bad consequences from the medicine, nor was any perceptible effect produced on the general system, except nausea and vomiting in a small number.

"From the foregoing analysis, I think we may conclude that, although the ergot may bring on labour without having recourse to any operation, yet that it does not present us a more likely, nor, indeed, so probable a means of saving the infant as the older method of puncturing the membrane."

Mr. Ramsbotham entertains an opposite opinion to Dr. Patterson as to the powers of ergot as an abortive. "I cannot grant," he observes, "that the uterus has a greater disposition to expel its contents prematurely in the latter than in the earlier stages of gestation; because, in this city at least, abortions, before quickening has taken place, are much more frequent than premature labours at the seventh or eighth months. Neither can I refuse credence to the notion that this medicine has a specific influence over the uterus even at an early period of pregnancy; because I have seen its stimulating effects on that organ in very numerous cases of dangerous hæmorrhage in the early months, when it was desirable to procure the complete evacuation of the uterus, and where no manual or instrumental means could be put in practice. Besides, it is neither philosophical, nor in accordance with our knowledge of the action of other drugs, to deny its influence over the gravid womb at one period of pregnancy, while we concede to it such an almost incredible power at another."

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50. *On Compression of the Aorta, to arrest Uterine and other Hemorrhages.*—M. Baudelocque, the nephew, in a recent paper on this subject states, he is convinced that the ordinary treatment of hemorrhage after delivery is very dangerous; cold effusion, the injection of cold or acidulated liquids into the uterus, often produce inflammation of the veins of that organ, a malady that proves fatal. He is led to this conclusion from a case that occurred at the Lying-in Hospital at Paris: a woman who had the placenta inserted into the neck of the uterus was delivered by turning; the hemorrhage was arrested by injections of cold water, mixed with vinegar. The following day she laboured under cephalalgia and fever, which increased. On account of her extreme debility and the quickness of her pulse, Desormeaux thought fit to order her some nourishment. On the seventh day she died; the body was opened, and the veins of the uterus were filled with pus.

"Another case occurred in the same establishment, in which the placenta was but in part inserted into the neck of the uterus. She suffered from hemorrhage during twenty-four hours; she was delivered by turning; the bleeding was stopped by the application of cold water, externally and internally; but the enfeebled patient survived but twenty-four hours. On opening the body pus was found in the left internal iliac vein; so that of all the means ordinarily employed

to check uterine hemorrhage there remains but one really good method, viz., the introduction of the hand into the uterus, in such manner that the fingers do not tear its tissue. My mode of proceeding in cases similar to the above, when the hemorrhage preceding delivery is not of great amount, is to detach the placenta in accordance with the ordinary rules. If it be abundant, with the fingers of one hand I compress the aorta through the abdominal parietes, while with the other introduced into the uterus, I detach the placenta.

"If after delivery the hemorrhage is trifling I give a dose of the ergot of rye; but, on the contrary, should it be alarming, and rapid, I immediately compress the aorta with one hand, and administer the ergot, repeating it a second time, if required, at the interval of a quarter of an hour; I then introduce the other hand into the uterus, with the object of relieving it of any coagula it may contain, rather than to excite it to contract, and there allow it to remain till it is expelled. By this mode of treatment I never lose a patient. If hemorrhage existed during gestation and labour, it becomes (as is generally known) much more serious, and more frequently fatal after delivery. In such cases I administer, in the first place, a glass of Spanish wine, in a lavement, which I instruct the patient to retain. I then compress the abdominal aorta with the fingers, and when the uterus has contracted on itself, maintain the compression by means of a bandage contrived for the purpose by Mme. Petitjean, which I tighten in such manner as to allow but a very small stream of blood to pass into the femoral arteries, the pulsation of which I from time to time explore; I place the woman horizontally on her bed, with the pelvis more elevated than the rest of the body, and occasionally administer a spoonful of wine and beef-tea alternately, with small lavements of the latter; I wrap warm cloths around her limbs, to render the capillary circulation more active, and to induce heat. By these means I affirm that I have never lost a single patient, who, at the moment I arrived had but a few ounces of blood in circulation. From the foregoing it appears that the employment of the ergot of rye is indispensable as a secondary means in arresting those alarming hemorrhages which occur after delivery; and, on the other hand, that it possesses no sort of efficacy when the hemorrhage must be instantly checked, the patient being in a state of complete exhaustion; in the latter case there is but one means of saving the life of the woman, viz., mechanically and instantaneously to suppress the hemorrhage, and to restore her strength as speedily as possible. With regard to the facility of compressing the aorta, M. Baudelocque observes, every one knows that immediately after delivery the walls of the abdomen are soft and relaxed; that the linea alba, examined in the umbilical region, presents an increased extent, varying from twenty lines to four inches or more, and that the intestines have not then returned to their ordinary situation; so that after flexing the superior and inferior parts of the body on the pelvis, by making pressure with the fingers immediately above the fundus of the uterus, the pulsations of the aorta are felt more readily than those of the radial artery at the wrist. Experience has taught that, if the compression is exercised even above the umbilicus, the blood flowing from the uterus forthwith stops. It may be here remarked that, should this effect fail to be produced, it is to be attributed to the person exercising the pressure, who should immediately remove his hand towards the left side of the vertebral column. The length of time the compression of the aorta must be kept up is necessarily in relation to the quantity of blood the woman has lost. If, for example, she have lost but little, a few moments will suffice, because soon after the compression is effected, the ergot of rye can be given. If, on the contrary, she have lost a large quantity of blood, the compression must be prolonged from half an hour to an hour, and when the hemorrhage has ceased, compression must be continued by means of a bandage to prevent its return; indeed, when hemorrhage after delivery is stopped by bandaging the abdomen, it is only effected by pressing the uterus against the spinal column."

MEDICAL JURISPRUDENCE AND TOXICOLOGY.

51. *On Poisoning with Hydrocyanic Acid.* By Henry Lonsdale, M. D.—The examination of a medical jurist, in a case of poisoning with this substance, may be resolved into three questions: 1. What time elapses between the taking of the prussic acid and the first appearance of untoward symptoms? 2. Within what period does the poison prove fatal? 3. Are the symptoms induced in man by a poisonous dose of prussic acid always uniform and characteristic.

From a careful calculation of the ages, weight, &c. of several animals, and the doses administered to them, as compared with man, I think it probable that a drachm of Scheele's acid would affect an ordinary adult within the minute; and a dose exceeding this, suppose three or four drachms, would exert its influence within ten or fifteen seconds. When the acid is stronger, and the quantity larger, we are pretty certain of its immediate action, and consequent annihilation of the sensorial functions.

As to the time at which the acid proves fatal. There are records of cases of the human species poisoned by the prussic acid where death occurred as early as the second minute, and as late as the forty-fifth minute. Should proper measures be adopted for the recovery of those poisoned, it seems probable that those who survive the fifteenth minute may recover.

The loss of consciousness and voluntary motion, the slow, deep, and heaving respiratory movement, whilst the circulation gradually becomes enfeebled, the fixed and insensible iris, in short, all the characteristics of apoplexy, were observed in the lower animals, and the same were observed in the physician at Rennes. But there is one circumstance which has received no attention from medico-legal writers, and that is the exhalation by the breath of the acid vapour. This has been observed in the human species, and numerous animals experimented upon by me, as already mentioned, and certainly would be sufficiently characteristic of the poison having been taken.

After a due attention to the symptoms, and the time and mode in which death takes place, it becomes necessary to detect, by chemical analysis, the presence of the noxious agent introduced into the animal economy. The small quantity of hydrocyanic acid necessary to prove destructive, its great volatility in an uncombined state, and facility of decomposition by substances with which it may come in contact in the stomach, are circumstances which have been, and always will be, great obstacles in the way of proving its presence.

My chemical examination of the blood, brain, and contents of the stomach, according to the method recommended by Leuret and Lassaigne, leads to the following conclusion: that from the fourth to the eighth day after death, although the odour is sufficiently strong so as not to be mistaken, yet careful distillation and the usual tests fail to prove the presence of the acid in animals which have been kept in the apartment where they were poisoned. These results coincide with what has been observed by Leuret and Lassaigne, who state that, when there was a strong odour of the acid in the brain and chest, they could not succeed in proving the presence of the acid by chemical analysis. The odour was very considerable in the contents of a stomach examined by Dr. Turner, yet the qnantity obtained by chemical analysis was very minute.

With the view of ascertaining the duration of the odour after death, I caused several animals which had been poisoned by the acid to be kept in a room, at the temperature of 50° Fahrenheit, during seventeen hours of the day, and others to be buried in light garden soil, six inches below the surface. The results of these experiments, (fifteen in number,) which were tested by at least three individuals in each case, lead me to expect the odour as late as the eighth or ninth day after death, even where life is prolonged to the eighth minute after a dose of the hydrocyanic acid.—*An Experimental Inquiry into the Physiological Action, the Poisonous Properties, and the Therapeutic Effects of the Hydrocyanic Acid.*

52. *On that Form of Insanity which Predisposes to Stealing.* By MM. Esquirol and Marc.—The following excellent observations precede the history of a case, which had been submitted to these two learned physicians by the court of law, with the view of obtaining their professional opinion as to the sanity of mind in a lady who was accused of various acts of theft and pilfering.

"The annals of insanity," they remark, "record numerous well-attested facts, which satisfactorily prove the occasional existence of a *monomania* of *stealing*." The act seems to be, in such cases, the consequence of disordered ideas and of false conceptions, the offspring of a delirium, or of an instinctive uncontrollable impulse. The person cannot, therefore, be considered as culpable or responsible for his deed.

It may be readily supposed, that it is often exceedingly difficult to determine this difficult and delicate question, when the state of mind is alleged as an exculpatory argument in favour of a person who has been accused.

A lady, fifty years of age, of hitherto irreproachable character, an excellent wife and mother, and of a generous, disinterested and charitable disposition, arrives at Paris, and there commits numerous larcenies in the shops of different tradesmen.

It was alleged in her defence, that her mind had not been perfectly sane at the time when she committed the acts.

Now, in all such cases, the first duty of the physician is to ascertain whether, at any former period of life, there has ever been any lesion or disorder of the mental powers. For if it can be shown that such has been the case—always excepting, however, that form of delirium which may exist during an active fever, and which usually disappears with it—there is at once a presumption that the criminated act may have been the consequence of a partial insanity.

This presumption acquires much more force, if there be any hereditary or consanguineous disposition to insanity, in any of its forms, in the party accused, or in her near relatives. It is also much strengthened, if the mental lesion appear to be at all periodic in the return of its attacks. It ceases to be a mere presumption and becomes almost a certainty, when the commission of the criminated act occurs at a period coinciding with that of the usual recurrence of the mental disorder.

Now, in reference to the case of the lady in question, it appears that she was of a highly nervous and very impressionable temperament; that repeated distresses had aggravated this susceptibility of character; that she had been affected with puerperal mania, upon one occasion, for five-and-twenty days, and that for several successive years since that attack, she had been subject, in the months of April and May, to headache, vertigo, and confusion of mind, accompanied with a propensity to suicide, and with a strange incoherency of speech.

At other times, too, her general demeanour indicated a want of steadfastness, and often a strange inconsistency of character, passing abruptly from benevolence and kindness to pettishness and anger, and from composure to most causeless excitement. In Mad. —— there were often two fits of taciturnity, during which nothing would induce her to speak or to answer questions.

This taciturnity constitutes, indeed, a prominent character in some disorders of the intelligence, more especially in that form of melancholy associated with delirium or lypomania.

The melancholy insane are usually distrustful, suspicious,* and afraid of those who approach them; and it is often very difficult to obtain an answer to any questions we may put to them.

At other times, however, they are quite frank and communicative; and then it would be difficult indeed even to suspect the existence of any tendency to mental irregularity in their case.

* That this character of monomania existed in Mad. ——, was evident from her aversion to MM. Berryer and Muller, two of her kindest and most considerate friends. Yet these two gentlemen she suspected to have been the instigators of her trial.

MM. Esquirol and Marc allude also to the state of corporeal health in Mad. ——, as confirmatory of their view, that she was subject to attacks of monomania. Her temperament was decidedly bilious; she was subject to attacks of severe pain in the stomach, to distressing headaches, to various hysterical symptoms, to constipation, and to irregularities of the menstrual secretion. Often, too, there was a constant restlessness of the system, and no healthy natural sleep could be obtained. It would seem, also, that the various acts of stealing, with which she was charged, had been committed about that period of the year when Mad. —— was liable to a state of mental excitement, bordering upon melancholic delirium. Her pecuniary circumstances, it is to be also considered, were at the time quite easy and comfortable; and her disposition was rather charitable and generous, than greedy and avaricious. When questioned by M. Esquirol, what was the state of her feelings at the moment of committing the thefts, she answered: "I scarcely know; but I had such a mad desire to seize every thing I saw, that, had I been in a church, I should have tried to steal from the altar itself."

This state of mind is certainly very singular and inexplicable, like many other intellectual phenomena; but it is no less real, as may be shown by reference to a great number of cases."—*Medico-Chirurgical Review*, from *Annales d'Hygiene.*

53. *Poisonous Vapour from Rotten Potatoes.*—A poor family had placed a heap of potatoes under a bed in their only room, where they were frozen during the night, but during the day were partly thawed by the heat of the stove; and they soon rotted from this variation of temperature. One day the children were told to pick the good potatoes, which they did by stirring up the heap with sticks; on which five persons inhabiting the room were immediately seized with giddiness, headach, and vomiting. The accident was ascribed to the fumes arising from the fire glimmering in the stove; and the window being accordingly opened, the patients soon recovered. On the following day the fire was not lighted, but the symptoms returned with equal violence, after the children had again begun to pick out potatoes; and relief was again obtained by opening the window and ventilating the room. These symptoms might be produced from the carbonic acid gas which rose from the fermenting mass of decayed potatoes.—*London Med. Gaz.* and *Schmidt's Jahrb.* May, 1839.

MEDICAL STATISTICS.

54. *Statistics of Pulmonary Consumption in Italy and France.*—LEGHORN.—Military and Civil Hospitals, 1833 to 1835.

Phthisis.	Males	54	Deaths		23
	Females	79	"		40
		133			63

The number of deaths from phthisis in the Civil and Military Hospitals of Leghorn being 63, and the general mortality being 678, it results that the deaths from consumption are to those from all other diseases, as one to ten and three-quarters.

FLORENCE.—Hospital of St. Maria Novella, 1836 to 1837.

	Males	3433	Deaths		519
	Females . . .	3121	"		502
		6554			1021
Phthisis.	Males	109	Deaths		46
	Females . . .	119	"		43
		228			89

The relative mortality of phthisis, and all other diseases in this hospital, was hence as one to eleven and a half.

Rome.—Hospital of St. John.

	Admitted	2540	Dead		379
Phthisis.	Admitted	126	"		110

From which it would appear that the mortality of phthisis is as one to three and two-fifths of all other diseases.

Naples.—Average of three Hospitals.

Admissions.	Male	3930	Deaths		935
"	Female . . .	2278	"		693
		6208			1628
Phthisis.	Admissions.	Male 556	Deaths		369
	"	Female 434	"		326
		990			695

Hence the mortality of consumption is here as one to two and one-third.

In the military hospitals the mortality of phthisis to that of other diseases was as one to three and six-sevenths.

It results from an examination of these tables that the mortality of pulmonary consumption is not very high, either at Florence or Livourne; while, on the contrary, at Rome and Naples it amounts to one in three and two-fifths and two and one-third.

On comparing the documents from which the above general results have been drawn, with returns furnished from the French hospitals, we obtain the following data for comparison:—

La Charite.—From 1835 to 1836.	Deaths	707
	Deaths from phthisis . . .	216

Here, then, the mortality of phthisis to that of all other diseases is as one to three and one-fourth.

Hopital Necker.—From 1834 to 1836.

Admitted		2304	Died		242
Phthisis.	Admitted	136	"		81

Proportion of deaths from phthisis one to three.

Val-de-Grace.—From 1835 to 1837.

Admitted	7509	Died 329
Deaths from phthisis		37

Proportion of the mortality from phthisis to the general mortality of the Military Hospitals, one to twelve and one-fifth.

If we compare the mortality from pulmonary consumption in the Civil and Military Hospitals of Naples and Paris, we shall find that the proportion is very much in favour of the latter city.

Civil Hospitals.—Naples, one in two and one-third; Paris, one in three and one-fourth.

Military Hospitals.—Naples, one in three and six-sevenths; Paris, one in twelve and one-fifth.—*Lancet*, 22d June, 1839, from *Bullet. de l'Acad. de Méd.* April, 1839.

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55. *Report of the Results of Revaccination in the Prussian Army in the year* 1838, *drawn up from Official Documents.* By Dr. Lohmeyer.—Total number of individuals inoculated (revaccinated) 42,041, of which number there were cicatrices from former vaccination

distinct, in	33,819
indistinct, in	5,645
none, in	2,577
The resulting vaccination was regular, in .	19,117.
irregular, in .	8,672
did not take, in .	14,252.

In the cases of failure the vaccination was repeated

with effect, in . . .	2,306
without effect, in . .	10,424.

Of the individuals in whom the disease was perfectly regular, there were from

1 to 5 pustules in	8,787
6 " 10 "	5,581
11 " 20 "	4,056
21 " 30 "	693.

Of individuals revaccinated with effect in the present and former years, there were affected, during 1828,

with varicella, . . .	19
" varioloid, . . .	10
" true smallpox, . .	2.

It appears, from the preceding statement, that the results of revaccination in the army, during the year 1838, closely resemble those observed in 1837, (see *British and Foreign Medical Review*, Vol. VII. p. 186;) in both years, about 45 in the 100 exhibiting true vesicles, running a regular course. The resemblance would have been still greater, but for the circumstance that many men were included who, according to their own account, had been previously revaccinated at their own homes, but who exhibited no marks on their arms; these were almost always among the failures. According to the reports of the medical officers, there were also many cases in which the development and course of the disease were disturbed, chiefly through carelessness on the part of the individuals in allowing the pustules to be broken or otherwise injured.

The opinion formerly pretty prevalent that, failing lymph immediately from the cow, the only proper matter for vaccination is that taken from children with good pocks, has now few supporters among the military surgeons, as they have ascertained, by manifold experience, that the lymph from well-formed pocks of adults, whether in the first or second vaccination, produces as fine and regularly-proceeding vesicles as that from children. Accordingly, it is the practice of most of the medical officers, only in the commencement of the revaccination to use lymph from children. Many even, like the Wurtemburg vaccinators, give the preference to the latter for communicating the disease to adults.

Inoculation with dry, preserved lymph, was in a great degree ineffectual. In a child vaccinated with lymph of this kind, there appearing no result, it was again vaccinated, eight days later, with fresh lymph from the arm, after which, not only all the latter punctures, but also two of the former took, and exhibited good and regularly-proceeding pocks. In the case of a man of the 6th artillery brigade, the pocks did not appear until six weeks after the inoculation, (two on the right, and three on the left arm,) and their development was accompanied by so much inflammation in the vicinity, and gave rise to so much fever, that it became necessary to remove the patient into the hospital.

In several individuals natural smallpox appeared soon after the vaccination. In two cases this happened before the third day, and in these the vaccination had no result. In two other cases, on the contrary, the modified smallpox (varioloid) appeared when the vaccine vesicles were in perfection, and then they sustained no alteration in their progress.

The whole number of smallpox cases in the army, in 1838, were 111, 56 being characterized as varicella, 43 as varioloid, and 12 as true variola; in this number are included the 31 cases formerly mentioned as occurring after successful revaccination. Seven cases of the smallpox were fatal, but no fatal cases occurred among the 31 just mentioned; in all of whom, on the contrary, the disease was mild, and indeed quite insignificant. The greater number of cases of smallpox (as was also the case in former years) took place in recruits shortly after joining the army, and before revaccination could be employed. Some of the older soldiers, however, were also attacked with the disease in some of its forms; for instance, some of the subordinate officers who had been previously revaccinated without effect, or who had entered the army previously

to the introduction of the practice of revaccination. Most of the cases of natural smallpox occurred in the 7th division, viz. 37, and for the most part in the garrison of Minden. In the 4th division, not a man failed with smallpox, although the troops mixed more or less with the inhabitants of their stations, or of the vicinity. This favourable result is principally to be attributed to this circumstance: that in the district of the 4th division, the recruits joining the army in the autumn of 1837 were, for the most part, subjected to revaccination immediately on their arrival; whereas, in other cases, it has been customary to put off the revaccination of such recruits, at least in a considerable proportion, until the spring.—*British and Foreign Med. Rev.*, July, 1839, from *Medicinische Zeitung*, May 8, 1839.

CHEMISTRY.

56. *Preparation of Pure Narcotine.*—Dr. O'Shaughnessey gives the following method for the preparation of narcotine:—The only process yet published by which pure narcotine can be obtained is that devised by Pelletier, but this method, nevertheless, is tedious, troublesome, and apt to fail, unless in very expert hands. I am happy, therefore, in being enabled to propose for the sanction of the Committee a process which is at the same time simple, economical, and productive, which *ensures the separation of the febrifuge narcotine from the powerful sedative morphia*, and which can be performed in every locality where opium can be found. The process is, as far as I am aware, altogether new.

Preparation of Muriate of Narcotine.

Take of Bengal opium -	2lbs.
Alcohol - - - -	20lbs.

Rub them well up together in a large mortar, adding the spirit by degrees until the opium is exhausted of its soluble parts. Decant the solution, and press the insoluble part.

To the alcoholic solution add as much ammonia as renders the liquid slightly turbid. Distil from a common alembic till fifteen pounds of the alcohol are recovered; draw off the fluid in the still, and set it aside to cool.

On cooling, it deposits a mass of coloured crystals composed of narcotine, meconate of ammonia and resin. Wash with water, which dissolves the meconate of ammonia, then with one quart of water and one drachm of muriatic acid, which dissolves the narcotine, and leaves the resin—filter. The solution, which is of a rosy colour, is to be evaporated to dryness.

The muriate of narcotine thus prepared is a transparent resinous mass, of a rosy colour, brittle vitreous texture, very soluble in distilled water and spirits, and intensely bitter.

A beautifully crystalline muriate of narcotine may be prepared by precipitating the muriate thus made, by ammonia, and dissolving the precipitate in boiling alcohol, from which the narcotine separates in fine crystals as the solution cools. The crystallised narcotine placed in a tube, and subjected to the influence of a stream of muriatic acid gas, combines with the acid while it retains its original crystalline form. But this process, though more elegant, is too expensive and elaborate for general use, and the non-crystalline muriate is just as valuable as the more beautiful product now described.—*Calcutta Quarterly Journal.*

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57. *New Preparation of Ipecacuanha.*—M. Gay describes a new mode of preparing this medicine, which may have its advantages in certain cases. The following is the formula:—

Ipecacuanha, in powder . . .	1 part.
Rectified Sulphuric Æther . . .	6 parts.

Macerate for some hours, and filter. Dry, by exposure to the air, the powder

remaining upon the filter till it has entirely lost the odour of æther; then triturate gently, and preserve for use.—Ipecacuanha thus prepared is administered in the same doses as ordinary ipecacuanha, having all the properties of the latter: it has only lost its nauseous odour and disagreeable taste.—*Bulletin Général de Thérapeutique.*

MISCELLANEOUS.

58. *Signs of the Times.—Medical Valets.*—The following article is from a recent No. of the *Medico-Chirurgical Review*. We transfer it to our pages from a conviction that we are rapidly advancing towards the same condition of things in this country, and in the hope that the comments of the Reviewer may attract the attention of those who are hurrying on this consummation, and perhaps cause them to halt in their efforts.

The overcrowded state of the profession, the result of causes we will not now stop to investigate, (but of which the ambition of parents in the humbler walks of life to see their sons professional men, and excessive immigration are the most potential,) compelled many, who were unable to obtain practice, to seek other sources of emolument. Teaching, for a time, offered such a resource, and hence the multiplication of schools, and the very extraordinary division of the profession, which to some extent now exists, into practitioners and teachers or professors. But with the excessive increase of schools, sprung up a rivalry to obtain students, as a source of emolument. For this purpose every temptation of cheapness and facility of obtaining degrees has been held up, and to make a show of full benches and thus attract pupils, gratuitous tickets have been liberally distributed. That, under such a condition of things, the ranks of the profession should be still further crowded, may be readily supposed. Have we not grounds then to fear that the profession is about being degraded to the state, when such advertisements as the following may be expected in our own papers?

"The following advertisement has several times appeared, and many such will no doubt continue to appear in the public journals.

"'*To Invalids and Gentlemen.*—Wanted, by a young man, a member of the medical profession, a situation to attend upon or travel with invalids, or gentlemen. Would have no objection to perform the duties of valet. Can give the most satisfactory references as to character, ability, &c.'—*Times*, May 27, 1830.

"What will the friends of cheap knowledge say to this? They are clamouring against the imposition of tolls on entrance into the profession—they tell us of the hardship, the iniquity, the obstacles they put in the way of poor merit. But high as they may be, cruelly as they may keep out the very deserving *and* the very poor, they are not so enormous, nor yet so cruel, as to bar the ingress of well-informed footmen, and lacqueys of certificated professional acquirements.

"Can any one doubt, does any one doubt, that the profession is overstocked? Look down any street, when the gas-lights have superseded the day, and count, if it be possible, the green and red bottles, the blue and bright lamps. Go to any medical adviser's office—cast the eye on the wrapper of any journal—and the applicants for practice, the hungry expectants of fees, absolutely mob you. How many throbbing heads, how many aching hearts, are engaged in the struggle for bread in the profession—how many repent that their friends were tempted to put them into it—and how many actually engaged in it look with dismay on the annual shoals of young men that enter it. Yet this is the state of things that friends of the profession would perpetuate and extend. What will be the result if the present system is continued? Just such applications as the advertisement we have quoted. Footmen will by-and-by make it a regular item in their qualifications, that they have been bred as 'reg'lar sawbones.' We only hope the qualification will be appreciated.

"A contemporary asks how it happens that the profession is deemed low in the social scale? The answer is obvious. Admission into it is easy—numbers are consequently admitted—those numbers breed competition—competition knocks down professional remuneration, and gives birth to professional tricks—the arts generated by necessity, the low practices, the shabby appearance bred in the same hotbed of meanness and infirmity, degrade the professors of such a science, and sink it in the world's esteem.

"The question is whether the matter shall be made worse, or a vigorous effort shall be attempted for the purpose of making it better. Make it better, say we—make it worse, say the out-and-outers. These Laputan sages care for nothing but their abstract principles. If the profession complain of being pinched and pauperised, 'that's low' urge the *feelosofers*. 'True *we* like to drive our team—true we have no objection to a good house and a powdered man, (we do not take medical valets on principle)—true we have no objection to get up in the world when we can—but with you it is another matter. You are a liberal profession—you should be above the low desire of ranking with gentlemen, and being thought such—you should feel the 'dignity of human nature,' and a little reflection might tell you that it is enhanced rather than diminished by a rusty coat, and a scant pair of breeches. Good friends, believe us, you are wrong to reject the great advantages we offer you—the pre-eminent merit of belonging to a profession which looks down upon the vain distinctions of aristocratic pride, and fraternizes with every noble son of a tinker or a tailor, who has scraped up his knowledge by the unassisted force of his own genius.'

"Medical practitioners of England, see the fate of your sons and your successors. In their hungry contests they may anticipate the fate of the Kilkenny cats, and eat each so effectually as not to leave even a tail behind."

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59. *Petechial Fever at St. Petersburgh.*—A correspondent for the *Zeitschrift für die gesammte Medicin*, for August, 1839, who dates from Petersburgh, says, petechial typhus fever has been really epidemic among us this year. It was not only the hospitals which were full of patients who belonged to the working classes suffering under this malady, but an extraordinary number of cases occurred among opulent families. It was surprising that the patients never seemed to be delirious during the course of the disease, but went on speaking and acting with consistency; yet when the disease was over, towards the end of the third or fourth week, they awoke with astonishment into a consciousness of their condition. The reason probably was, that the typhus action was almost entirely spent upon the lungs and skin, so that the reaction amounted to inflammation in these organs alone, while the brain remained continuously narcotized. With us, as in Germany, the measles have been of an unfavourable character this year, from thorax, and even with irritation of the membranes of the brain; they also attacked many persons for the second and even the third time.—*Lond. Med. Gazette*, Aug. 1839.

AMERICAN INTELLIGENCE.

Two Cases of Severe Injuries from Explosion of a Cannon, without constitutional symptoms. By Samuel Webber, M. D., of Charleston, N. H.

On the 4th of July, 1835, as a company of young men were engaged in firing a cannon in honor of the day, while two of them were in the act of ramming down a cartridge, it exploded, and severely wounded them. The left arm of one was taken off about two inches below the elbow, and his face was much torn and lacerated; his right hand and fore-arm were also considerably burned. As soon as the necessary dressings, instruments, &c., could be got ready, I amputated the stump above the elbow, making two flaps, before and behind. Proceeding to dress the face, it was found that, in addition to some burning and divers cuts and scratches about the cheeks and eye-brows, the half of the right eye-lid nearest the nose was torn or cut from the internal canthus half of its length, and hung down a swollen and shapeless mass over the eye upon the cheek; the cartilage of the nose was also divided by a jagged cut, extending from just above the base of the ala of the left side, obliquely to nearly the base of the nasal bone of the right side. These injuries were supposed to have been occasioned either by splinters of the ram-rod, or by fragments of the wad, which was hastily made of weeds and grass torn up on the spot where the firing took place. After the parts had been cleansed and softened by the application of an emollient poultice, I noticed a small speck of some white substance projecting from the angle of the wound in the eye-lid, and, with the assistance of a probe, soon disengaged a small piece of bone, probably a fragment of one of the bones of the arm, a quarter of an inch long by a line in breadth, and half a line in thickness; one or two similar but larger fragments made their way in a day or two from the back part of the nostrils into the throat, and were spit out. The stump healed by the first intention, as also the wound in the nose. Part of the torn fragment of the eye-lid sloughed, and the remainder fractured so irregularly, as to form an insufficient cover for the inner part of the eye-ball, at the same time drooping so much in the centre as partially to obstruct the vision. In a fortnight, however, the man was well enough to be out of doors, and left this place for his home, some miles distant, so that he was not under my care while the healing of the wounded lid was completed.

The other sufferer had the radius and ulna and more than half of the flesh of the right fore-arm carried away, and the inner side of the upper part of the same arm, and the whole of the right side and breast from the axilla to the hip-joint, severely burned; the ball of the thumb of the left hand torn up and partially blown away, the line of rupture extending from the wrist to the joining of the fore and middle fingers, and the

metacarpal bones of both thumb and finger broken near their joining with the bones of the wrist, with some considerable burning on other parts of the hand and fore-arm. Having no choice of a spot of sound skin, I amputated a little above the elbow, as good a place as I could find, though the cutis on the inner side of the arm was burned almost to a crisp, and threatened much trouble in the dressing and healing of the stump. The flap operation was used in this case also, and the flaps were made rather long. Their faces adhered by the first intention, but the integuments that were burned all sloughed off, and the stump did not cicatrize till the expiration of six or seven weeks, when also the other burned surfaces healed. The fore-finger of the left hand mortified up to the palm, and as soon as a line of separation was established, I dissected out the broken metacarpal bone of this member, and brought the flap over to cover the loss of substance in the palm as far as it might; and as by the contraction in the cicatrization, the thumb was drawn forward in a line with it, it proved a very fortunate arrangement, as an even surface was presented in the outer side of the hand, and the apposition of the thumb to the middle-finger was a matter of necessity. About six weeks after the cicatrization of the arm, a small ulceration took place in the seam of the flaps, from which I removed a portion of the extremity of the humerus, where it was divided on the side in contact with the burned integuments; the orifice closed without trouble.

In neither of these somewhat severe cases were there any particularly troublesome constitutional symptoms. I have seen much more severe ones often from a much slighter injury.—The subjects, too, were very hearty and athletic young men.

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Dislocation of the Patella upon its Axis.—Dr. John Watson relates, in the second No. of the *New York Journ. of Med. and Surg.*, the following very interesting case.

"Henry Burton, a carman, of rather slender frame, and about 35 years of age, was on horseback in a crowd at the Park, August 21st, 1839, waiting to see the public reception of the Hon. Henry Clay. In the confusion of the crowd, another horseman backed his horse against him, and the animal's hip striking against Burton's right leg, injured him so severely that he was unable to say how, or in what direction he received the shock. He was carried immediately to a neighbouring hotel.

I saw him soon after the accident, in connection with Dr. L. C. Ferris, Dr. Stearns of the northern part of the city, and Dr. Thomas F. Cock. The patient was complaining of severe pain; the leg was perfectly straight, but could be flexed about to an angle of 140° without increasing his suffering. The patella appeared to be slightly drawn up, and it was twisted upon its axis, presenting its outer edge, in a prominent hard line, in front of the knee: its inner edge was resting either in the groove between the condyles of the femur, upon which its posterior face should naturally play, or in the small indenture on the anterior face of the femur, immediately above this groove. The anterior surface of the patella was turned inward, its posterior surface outward, and it rested nearly at right angles with its natural position. Its upper and lower attachments were both preserved, and could be distinctly felt; and a sort of band appeared to pass from its under, or, as it now lay, its outer face, inward to the deeper portion of the knee-joint. This band, as I conceived, was caused, either by the tension of the capsular ligament, or by the rupture of its edge, as it passes from the outer side of the patella. The position of the bone was so well marked that no one at all acquainted with the anatomy of the part, could mistake the nature of the accident.

With the leg extended, and the anterior muscles of the thigh forced downwards as much as possible, pressure was made upon the patella with the expectation of forcing down its prominent edge, and pushing the bone directly into its proper position. The effort was followed only by a severe increase of pain; the bone remained permamently fixed. Another attempt was made to cant its posterior edge inward, and to bring its anterior edge outward, without pressing it against the condyles of the femur, by forcing the head of a key against the posterior, now the outer face of the patella, (using this as a fulcrum,) and pressing the prominent edge of the bone towards the outer condyle. This manœuvre gave him no pain; but was as fruitless in its result as the other. At length the knee was forcibly bent, and immediately straightened again; and then, by canting the patella as before, and pushing it slightly downwards and inwards, it sprung, with a sudden snap, into its proper position. The reduction would, doubtless, have been facilitated by flexing the thigh strongly upon the pelvis. This, however, was not attempted, and the manipulation just described, answered every purpose.

As soon as the bone was replaced, the pain ceased; and the patient thinking himself well again, stated that he could now walk as well as ever. A straight splint was applied behind the limb, so as to secure the joint, and the patient was sent home in a carriage, with directions to keep the knee at rest for a few days, and to apply to it evaporating lotion.

Most authors who have spoken of luxations of the patella, state that this bone is subject only to the outward and the inward lateral displacement. Sir Astley Cooper admits also an upward, and Boyer speaks of both an upward and a downward displacement. But the two former displacements, according to all the writers who have hitherto dwelt upon these accidents, are the only ones that can occur, independent of a rupture, either of the ligament of the patella, or of the common tendon of the extensor muscles of the leg. In a hasty perusal of most of the surgical authorities, as well English as French, I have met with but one instance bearing any relation to the case just related. "I was informed by Mr. Welling, formerly surgeon at Hastings," says Sir Astley Cooper, "that he was called to a case in which the patella was dislocated upon its edge. The nature of the accident was very obvious, as the edge forced up the integuments to a considerable height between the condyles on the fore-part of the joint. Mr. Welling reduced the dislocation, but with considerable difficulty, by pressing the edges of the bone in opposite directions."*

Sir Astley Cooper gives this observation in a distinct paragraph, without remarks upon it; and, as if in need of confirmation, he allows it no place in his enumeration of the several luxations of the patella. Nothing of the sort is mentioned in Mr. S. Cooper's Dictionary. Boyer, after speaking of the lateral displacements, states, that independent of these, some surgeons have thought that this bone might be luxated "by turning half-way round upon itself, and resting with its edge in the articular pulley of the femur; but," says he, "it is impossible to conceive how the tendon of the extensor muscles of the limb, and the ligament of the patella, could be twisted in unison with the rotation of the bone upon itself; and it is still less conceivable how these parts could be completely turned round from before backwards, as some pretend to have seen."†

Where the luxation of the patella outward is but partial, the signs of the accident must be more like those of the case I have described, than where the outward luxation is complete. Yet the difference is still too striking to allow this accident to be confounded with a partial luxation outward. "The external displacement," says M. Sanson, "is easily recognised by pain, inability to walk, and deformity of the knee; by the ease with which the inner edge of the articular pulley of the femur, as well as that part of the surface of the pulley which is not covered by the patella, can be felt beneath the integuments; by the prominence upon the external edge of this pulley, formed by the patella, the

* Cooper on Dislocations and Fractures, 4to. Lond. 1829, p. 175.
† Boyer, Maladies Chirurgicales, Paris, 1834, tome 3, p. 449.

outer edge of which is *slightly directed forward*, whilst its anterior face is turned *a little inward*, and its posterior face is so situated on the external condyle that the outer portion of it may be easily touched, by the tension and external deviation of the tendon of the muscles on the anterior part of the thigh, and of the inferior ligament of the patella; by the permanent extension of the leg."*

But in the case which I have described, the leg could be slightly flexed; no part of the pulley, except its elevated borders at the condyles of the femur, could be felt; *the patella was drawn upwards, and twisted nearly at right angles with its proper position, so that its anterior face was directed inwards, and its outer edge was thrown completely forward, forming an uneven and very prominent line beneath the shin in front of the joint.*†

But though the position of the patella in this case was very different from that which it occupies in the subluxation outwards, yet it is easy to see how the latter accident might be resolved into this. For the patella in slipping outward, while passing over the outer edge of the pulley of the femur, must, from the very shape of the bones, have its outer edge tilted forward, and its inner edge, in consequence, thrown a trifle backward. Now, whilst in this position, and before the patella is allowed to reach fairly to the anterior face of the condyle, a sudden contraction of the rectus and vasti muscles must tend to bring the bone back again within the line of their action: so that instead of slipping completely over the condyle, it will either fall back into its natural position, or its inner edge being arrested, and the bone being thus prevented from moving inwards bodily, its outer edge must be drawn forward towards the axis of the limb, and the accident I have described will be thus produced.

Though some authors describe the lateral displacement as one, occasionally, difficult of reduction, yet as a general rule, the bone slips into its place very readily, from the slightest pressure upon it, especially where the knee is extended, and the thigh flexed upon the pelvis; or, as some direct, by attempting to flex the knee, and thus elongate the muscles in front of the thigh. But in the case of Burton, just related, as well as in the case reported by Mr. Welling to Sir Astley Cooper, the patella was firmly fixed, and reduced only after considerable manipulation.

In a case of complete dislocation of the patella outward, which occurred to me, July 26th, 1838, the slightest push of the thumb was sufficient to restore the bone to its proper place. And somewhat contrary to the diagnostic signs usually given as characteristic of this accident, the leg in this instance was slightly but firmly flexed. The case was that of a young lady of about 22 years of age, remarkably fleshy, but of lax fibre. The accident occurred in dancing. In working the joint immediately after reducing the dislocation, it gave a rough and rubbing sound that might have been mistaken for the crepitus of a fractured bone. Some œdema and effusion within the capsule followed the accident. But the application of leeches, rest in an elevated position, evaporating lotions, and finally a roller, were sufficient, in the course of a week or ten days, to restore the joint to its condition.

Authors differ as to the frequency of simple dislocations of the patella. By

* Dictionnaire de Méd. et Chirurg. Practiques, tome 11me p. 270.

† Since writing these remarks, Dr. Thomas F. Cock has called my attention to an abstract of two cases, published in Johnson's Journal, that, at first view, appear to be of the same nature as the case I have related. But, on referring to the Medical Gazette, vol. 2. p. 754, I find that Mr. Mayo has given a woodcut illustrative of the first of these cases, which proves to be precisely what M. Sanson has described as the subluxation outwards. The other case referred to in Johnson's Journal, (July, 1829,) is quoted from Rust's Magazine for 1828, and is said to be similar to Mr. Mayo's. It appears, however, to be more like mine, but not having the original to refer to, I am unable to form a correct opinion of its true nature. Dr. Wolff, who had charge of it, was unable to reduce it. He divided the tendon above the patella, and the ligament below it; but without bringing the bone into place. The patient, finally, died from the disease of the knee joint which followed the operation.

referring to some, we might be led to believe these accidents of very frequent occurrence. Such, I suspect, is not the fact. Although I have heard of a few cases in the practice of my acquaintance, the two which I have now mentioned are all that have fallen immediately under my own observation. Mr. Liston, in his Elements of Surgery, states that he has never met with a single case.

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Case of Cæsarian Section, terminating favourably to the Mother—Dr. Hoffman, of New York, has reported to the New York Kappa Lambda Society, the case of Mrs. Day, to whom he was called by Dr. Cockroft, jun., on the 12th August, 1838. The patient was in labour with her first child. She was a dwarf—4 feet high—42 years of age—her spine and body seemed of ordinary length, but lying on her side in bed, she appeared to have no legs, the length of her lower extremities not being greater than that of an ordinary thigh, and her upper extremities equally disproportioned. On examination *per vaginam*, the anterior surface, or what should be the hollow, of the sacrum, was felt bulging forward with a regular, smooth, convex prominence, that had been mistaken for the head of the fœtus at the full time. To prove that the sacrum projected forward, the fore-finger was introduced up the rectum, and found to pass anteriorly to the projection—at the base or promontory, the sacrum approached so near the symphysis pubis, as to admit with difficulty the passage of two fingers between them, reducing that space to about an inch and a quarter. Laterally, there was more space, but not in the antero-posterior diameter. The head of the child could be reached by the finger through this narrow aperture, lying above the brim of the pelvis, and its outlines could be distinctly felt through the parietes of the abdomen, pressing on and projecting forward over the os pubis. A catheter was introduced, and the bladder found nearly empty. Drs. Belcher, Cockroft, and the reporter, concluded that there was no resource but the section of the womb. Dr. A. L. Anderson, so well known for his obstetric skill and experience, was called in, who thought, that by care and very patient waiting, it would be practicable to deliver by embryotomy. Dr. Hoffman was unwilling to resort to this, from the conviction that, with a space not wider than an inch and a half at most, with the rectum behind and the bladder in front, together with the relaxed os tincæ in the way, and the head hardly within reach of the finger, it would be almost impracticable, and would endanger wounding the bladder or rectum, and lacerating the cervix uteri. He, however, went home to procure instruments, and requested his neighbour, Dr. John Watson, to accompany him to the patient, who, after an examination of the case, decided in favour of the Cæsarian section: Dr. Cockroft, (whose patient she was,) and Dr. Belcher, who had seen her in consultation, agreeing in this decision, and requesting Dr. Hoffman to perform the operation, the patient having then been in labour 24 hours. Dr. H. proceeded as follows: placing the patient on her back on a cot, with the thighs flexed on the pelvis, an incision from six to seven inches in length was made through the skin from near the os pubis to the umbilicus, in the course of the linea alba. Being much stretched by the distended uterus, the integuments receded to the extent of three or four inches as they were separated by the scalpel, and were easily divided by slight touches of the knife. On dividing the exposed peritoneum, some fluid gushed out, which it was thought might be urine from an over-distended bladder, though the catheter had been introduced two hours before. To remove any apprehension of this kind, that instrument (a long flexible one) was again introduced, and very little urine was found in the bladder, showing that the fluid came from the cavity of the peritoneum. The uterus thus laid bare, was divided by one stroke of the knife, about five inches in length, the head of the child, (the occiput presenting,) was at once protruded through the incision, and, with a little assistance, was delivered, followed by the shoulders, &c. It evinced signs of life by gasping and moving the arms. Dr. Belcher took it in charge. With the umbilical cord as a guide, Dr. H. then introduced his left hand through the incision into the uterus, (which was not felt to contract,) and on gently pressing the placenta, it was found to be detached, and was removed. There was not

more hæmorrhage than usually attends a natural delivery. The small intestines, which had protruded to a considerable extent, were carefully replaced. and the wound brought together by 6 or 8 sutures, not including the peritoneum. Adhesive straps, compress, and bandage were then applied. The pulse was good, and did not flag during or after the operation—20 drops of solution of sulphate of morphine were given, and repeated during the night.

13th.—Second day, 7 A. M.; 9 hours after the operation. Patient had slept, and had passed a tolerably good night; felt comfortable; had not voided urine; pulse 120; some heat of skin, no distension of abdomen; an enema of infusion of flaxseed was prescribed.

5 P. M.—19 hours after operation. Had voided urine twice; the enema, which had been repeated, had not come away; abdomen more tense; and somewhat tympanitic, tender to the touch, and pain darting from one lumbar region to the other; pulse 104, and strong. She was freely bled, and 15 grains of calomel were ordered, to be followed at bed-time by castor oil; hop fomentations to be applied to the whole abdomen.

14th.—Third day. Abdomen tumid and tender; no discharge from bowels had taken place; an enema, containing ol. terebinth., was then given, and was followed by a free evacuation of the bowels; 18 leeches were then applied to the abdomen, and the fomentations continued.

15th.—Fourth day. Venesection repeated to 10 or 12 ounces, and fomentations persevered in.

17th—Sixth day. Wound was dressed, leaving the sutures, union being incomplete; pulse 110; ordered castor oil.

By confining her to a very small quantity of light nourishment, by the occasional use of aperients or enemata, and by fomentations, assiduously applied to the abdomen, the soreness and uneasiness were gradually removed; and on the second of September, three weeks after the operation, the patient was sitting up in a chair, "feeling *smart*," with a good appetite, and her bowels regular. The wound had closed, with the exception of a very small space at its lower part—a probe introduced into this, could be felt at the os tincæ, showing that the incision into the uterus was not entirely closed. Four weeks after the operation, the patient (who was a very estimable and industrious little woman) set out on her journey home, on Long Island, at a distance of 30 miles, with the wound completely closed, and in good health. In October following, she was heard of as continuing in good health.

The child was deformed in the lower extremities, and did not long survive its delivery.—*New York Journal of Medicine and Surgery*, July, 1839.

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Fungoid Tumours of the Tibia.—Dr. Stille exhibited to the Pathological Society of Philadelphia, at a recent meeting, a specimen of Fungoid Tumours of the Tibia, and read the following notes of the case:—

I. R., an Irishman by birth, a journeyman in a powder factory, and aged thirty-three years, was in the enjoyment of robust health, when, about twenty months ago, he fell, and struck the outer part of his left knee, between the tubercle of the tibia and the head of the fibula, upon a rounded stone. No ecchymosis followed the injury, but a small lump made its appearance within a few hours afterwards, which, after three or four months, increased to about the size of a hen's egg, and rendered the movements of the knee so difficult and painful as to oblige him to abandon his employment. He came to the Pennsylvania Hospital, where, after a mature examination, the tumour was thought to be aneurismal; and in September, 1838, the femoral artery was tied in the hope of curing it. During five weeks the operation seemed to have been successful, but at the end of that time the patient was discharged at his own request. On his return home he ceased to observe the precautions he had been advised to; and the tumour reappeared, and continued to increase slowly until May, 1839, when, on making a sudden effort to straighten his leg, he felt, to use his own expression, "something give way about the knee." From this period the growth of the tumour was more rapid; R. was unable to leave his bed, on account of its weight, and

the pain which change of position produced in it, and he again entered the hospital during the last month. It increased notably during several weeks, and the surgeons of the institution decided that it should be removed by amputation of the thigh.

The following note was taken on the day preceding the operation:—The leg was bent upon the thigh at an angle of from 90° to 100°, and could be moved passively within these limits, but not without inflicting considerable pain. The muscles of the whole limb were emaciated; there was some œdema of the foot. The health of the patient was good, with the exception of a general feebleness referrible to his long confinement in bed. One of the glands of the left groin was slightly enlarged and sore. The tumour formed a rounded mass, commencing at eight inches and a half from the lower end of the tibia, and extending to the patella and the condyles of the femur, which could be felt as distinct from it. The skin covering it was a little more ruddy and smooth than that of the thigh, and was traversed by dilated and tortuous veins. The surface, in general, was smooth, and, although undulating, presented no abrupt prominences nor depressions. The tumour was of a more regularly rounded form in its anterior and external portions than internally and behind. Its greatest circumference measured sixteen inches. An inch above its junction with the tibia below it measured twelve inches; and on a line passing through the point of the patella and the ham, just above the tumour, twelve inches and a half in circumference. Its greatest length, or that measured from the point of the patella to the nearest point of the shaft of the tibia, was five inches. To the touch, the skin covering the tumour was sensibly warmer than on the thigh. It offered various degrees of hardness—its outer half being almost as resistant as bone, and somewhat elastic under firm pressure, which was painful. A like degree of hardness existed in the whole circumference of the tumour near its upper and lower lines of attachment—but in the middle space, on its inner side, there was much less hardness, and a high degree of elasticity, but no signs of fluctuation. In the ham the tumour was soft, but less elastic. When the tumour was lightly grasped by the hands, a faint pulsation could be distinguished. The pulses of the poplitial artery could be felt high up in the ham, and at the same point there was a distinct *bruit de souffle*. Where the shaft of the tibia joined the tumour, an angle was formed, owing partly to the convexity of this latter, and partly to the fact that the axis of the tibia was not directed towards the condyles of the femur, but to a point behind them. All attempts to move the leg passively gave great pain.

The amputation of the thigh was performed by Dr. Norris on the 16th inst.; the femur was divided about the junction of its middle with its lower third. The medulla of the upper fragment was of a light yellow colour, and of a pasty consistence, and the bone was less resistant than natural. *Nineteen arteries* were secured at the time of the operation, and secondary hemorrhage having occurred about ten hours afterwards, five additional ligatures had to be applied.

The excised portion of the femur being sawn in two through its epiphysis, the reticulated structure was found filled with a yellow, butter-like substance, and was easily crushed by the finger. The medullary canals of the femur and tibia were filled by the same yellow substance, and these bones themselves had a sensibly diminished consistence. On dissecting away from the tumour the skin and muscles, (which were pale and flabby,) its greatest circumference measured thirteen inches and a half. The cartilages of the knee-joint presented no unusual characters, except a thinning and slight discolouration of the one lining the external articulating fossa of the head of the tibia. The poplitial vessels and nerves lay over the back part of the tumour, and separated from it by their common sheath, but no branch from them could be found communicating with its interior. There was no appreciable deviation from the ordinary size and structure of the poplitial artery. Several tunics enveloped the tumour, viz. 1st. A complete one of condensed cellular substance, mingled with a little fat. 2d. The superficial fascia of the muscles of the upper part of the leg, considerably thickened, and apparently continuous with the periosteum. 3d. A bony shell entirely

surrounding the tumour at its lower, and also at its upper part, but in the intermediate space complete on the outer half of the tumour alone, the inner half presenting only a few bony spicula distributed over its fibrous layer. This bony shell was from four to five lines thick where it joined the shaft of the tibia below, and the articular cartilages above; in other parts it was pretty uniformly about two or three lines in thickness. It appeared to consist in a globular expansion of the external table of the tibia, while the internal table, the intermediate spongy structure, and the medulla, were continuous with the cavity of the tumour, and the matter contained in it. This matter was chiefly composed of a soft solid, closely resembling a child's brain that had been crushed by the fingers. It was of a ruddy or brownish colour, and generally disposed around a number of central masses or nuclei, which had in some places the characters of yellow, semi-transparent coagula—and in others of a cerebriform matter, rather firmer than the more superficial portions of the tumour. In the centre of one nucleus of the latter sort, a few grains of calcareous matter were detected. Under the spot formerly occupied by the supposed aneurismal tumour, but within the present body parietes, was found a clot about two inches and a half long, by three-quarters of an inch thick, of a buff colour, lamellated in its structure, and firm under pressure. It was surrounded on every side by the prevailing brain-like matter of the cavity. A number of rounded apertures might be perceived on the surface of a section of the former portions of the tumour, but their walls were very easily torn by the probe. No vessels could be distinctly traced within the tube, but streaks, and small masses of blood, were frequently to be met with. Several small cysts were opened, and found to contain a yellowish, transparent, viscid fluid.—*Medical Examiner*, Oct. 19, 1839.

Removal of the Upper Jaw with a large portion of the Malar Bone.—This very formidable operation has, we learn, been recently performed by Prof. John Warren, of Boston. The patient was a gentleman about 60 years of age, who for some time had been affected with fungus of the antrum, of a dreadfully painful kind, which must soon have proved fatal. The tumour was of a sugar-loaf form, occupying the right side of the face, and had forced its way through the cavities pertaining to the maxillary bone. The right eye was compressed and inflamed, and the cavities of the nostril partly filled by the tumour. Of course, the support of the right eye and the right side of the right nostril and palate bones was removed—thus opening the nostril, mouth and orbit into one common cavity. The patient supported this trying operation without a groan, and at its termination said that he would willingly submit again, were it merely to get relief from the intolerable sufferings which he had experienced from the pressure of the tumour. He rose from the chair, at the conclusion, and undressed himself before retiring to bed. The wound was closed by the twisted suture, and united by the first intention. In a fortnight he was well enough to leave the chamber and amuse himself with a spy-glass—using the organ which had been partly dissected from its socket in the operation he so lately passed through. The operation took place on the 17th of September, and on the 9th of October the delighted patient, thus almost miraculously saved from a horrible death, was able to leave the house.—*Boston Med. and Surg. Journal*, Oct. 16, 1839.

Albany Medical College and the Thompsonians. We cheerfully comply with the request of the President of the Albany Medical College, to insert the following letter, explanatory of the transaction between this college and the Thompsonians, a notice of which, copied from another journal, was given in our preceding No.

To the Editor of the American Journal of the Medical Sciences—

Sir: An article appeared in the No. of your "Journal" for August 1st, headed "The Albany Medical College and the Thompsonians," which would lead to the idea, that some especial connection existed between this

college and the Thompsonian doctors. As this notice is calculated to lead the public into error, (unintentionally, no doubt, on your part,) we appeal to your fairness to publish the following explanation in the next No. of your Journal:

The Thompsonians, during their meeting in Albany, requested permission to visit the Albany Medical College; which was granted to them as to other persons who apply for the same favour. While there, they expressed to Dr. March, their intention to recommend to their students to acquire a more thorough knowledge of "anatomy, physiology, surgery, and chemistry;" and asked, on what terms they could be received in the institution. Dr. March replied, that they could be received on the same terms as any other persons. It was neither intended by Dr. March, nor understood by those who made the inquiry, that the Thompsonian students would be admitted to graduate, nor be allowed any privileges which they would not enjoy in any other medical institution; for, we suppose, that no institution would refuse to receive an applicant, to attend their lectures, simply because he might be a student of a Thompsonian doctor.

The charter of the Albany Medical College expressly enjoins, among other requisites for graduation, "that the student shall have pursued the study of medical science for at least three years after the age of sixteen, with some physician and surgeon duly authorized by law to practise his profession;" so that it would be out of the power of the faculty and trustees, to grant degrees to Thompsonian students, even were they disposed to form an alliance with them, such as, from your remarks, you would seem to suppose exists. Any other privilege, but that of graduation, they would enjoy in common with the other students in the Albany Medical College, as in other medical colleges in this country.

This explanation would have been made on the first appearance of the resolutions in the "Albany Evening Journal," but it was supposed, that the publication would not be noticed out of the city of Albany, where the whole matter was understood. But, since it has found its way into two of the most respectable journals of this country, the trustees deem it proper to correct the erroneous impression to which it might give rise.

JARED L. RATHBONE, *President.*

ALBANY, *August* 24, 1839.

[The preceding statement, though it will not be considered as justifying the Albany Medical College in holding communion with the Thompsonian Medical Society, certainly represents in a different aspect, the interchange of civilities which took place on the occasion. The official report of the Thompsonian Medical Society made it appear, that they were *invited* by Prof. March to visit the Albany college: and that this institution *proposed* to receive Thompsonian students into its classes. Whilst Mr. Rathbone asserts, that the Thompsonian Medical Society *requested permission* to visit the college, and *spontaneously determined* to recommend to their students to attend certain courses delivered in the college.]

The Dispensatory of the United States of America, by Professors Wood and Bache, fourth edition, enlarged and carefully revised, reached us too late to enable us to do more than just announce its publication. Its value is, however, so well known, and its authority so firmly established, that it would be almost a work of supererogation in us to attempt to indicate its various and solid claims for approbation.

Stewart's Translation of Billard's Treatise on the Diseases of Infants.—This valuable work has just been published by Mr. G. Adlard, of New York. We hope, on an early occasion to be able to indicate more particularly its merits.

—

Marshall Hall's *Principles of the Theory and Practice of Medicine, revised and much enlarged* by Prof. Bigelow and Dr. Holmes.—In our next No. we shall give a review of this work; in the mean time we may commend it to the notice of the profession. The additions by the American editors are copious and important.

—

Lodge's Translation of Lisfranc's Lectures on the Diseases of the Uterus.—On a former occasion (No. for Nov. 1837, p. 179,) we noticed the original work and gave a summary of one of its chapters—that on amputation of the Uterus. We have now pleasure in calling attention to the excellent translation of Dr. Lodge, which is a useful addition to our literature.

—

Hayne's *Utero-Abdominal Supporter.*—This is a decided improvement upon the utero-abdominal supporter of Hull; indeed, so far as we can decide without an actual trial, we may pronounce it to be the best instrument of the kind that has come under our observation.

—

Medical Convention.—In obedience to a resolution of the Medical Convention of the United States, assembled in Washington City in January, 1830, public notice is hereby given, that a similar Convention will meet at the National Hotel, in the said city, on the first Wednesday of January, 1840, for the purpose of revising the Pharmacopœia of the United States.

Each incorporated State Medical Society, incorporated Medical College, and incorporated College of Physicians and Surgeons, is requested to elect a number of delegates, not exceeding three, to attend the said Convention. The several incorporated bodies mentioned are also requested to submit the Pharmacopœia to a careful revision, and to transmit the result of their labours, through their delegates, or through any other channel, to the next Convention. They are further requested to transmit to the undersigned the names and residence of their respective delegates, so soon as they shall be appointed, so that a list of them may be published, for the information of the Medical public, in the month of October next.

By order of the Medical Convention, assembled at Washington, in January, 1830.

LEWIS CONDICT, M. D., *President.*

Morristown, New Jersey, April 6, 1839.

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Medical Convention.—The following gentlemen have been elected Delegates to the Medical Convention for revising the Pharmacopœia of the United States, to meet at Washington on the first Wednesday of January, 1840; viz:—

George B. Wood, M. D., Franklin Bache, M. D., Henry Bond, M. D., by the College of Physicians of Philadelphia.

Thomas Sewall, M. D., James C. Hall, M. D., Nicholas W. Worthington, M. D., by the Medical Society of the District of Columbia.

Lewis Condict, M. D., ——— Forman, M. D., by the New Jersey Medical Society.

David M. M'Lachlan, M. D., by the Albany Medical College.

Theophilus C. Dunn, M. D., Usher Parsons, M. D., by the Rhode Island Medical Society.

Dixi Crosby, M, D., Daniel Adams, M, D., Amos Twitchell, M. D., and as substitutes, John B. Dousman, M. D., Josiah Bartlett, M. D., Robert Burns, M. D., by the New Hampshire Medical Society.

William M. Morris, M. D., Cuthbert S. Green, M. D., James Cooper, M. D., by the Medical Society of Delaware.

John C. Richardson, M. D., John C. Darby, M. D., Dr. Caleb M. Cloud, by the College of Physicians and Surgeons of Lexington, Ky.

Published by direction of the Medical Convention which met at Washington in January, 1830.

LEWIS CONDICT, M. D., *President.*

University of Pennsylvania.—Medical Department.—The Lectures commence annually on the first Monday of November, and continue until the ensuing March.

Theory and Practice of Medicine,	By Nathaniel Chapman, M. D.
Institutes of Medicine,	By Samuel Jackson, M. D.
Special and General Anatomy,	By William E. Horner, M. D.
Materia Medica and Pharmacy,	By George B. Wood, M. D.
Chemistry,	By Robert Hare, M. D.
Surgery,	By William Gibson, M. D.
Obstetrics and Diseases of Women and Children,	By Hugh L. Hodge, M. D.

Clinical Medicine and Surgery taught by the prescribing Medical Officers at the Blockley Hospital, under the Guardians of the poor, and at the Pennsylvania Hospital.

—

Medical College of the State of South Carolina.—The annual course of Lectures of the Medical College of the State of South Carolina, will commence on the second Monday of November.

J. Edwards Holbrook, M. D.,	*Professor of Anatomy.*
John Wagner, M. D.,	*Professor of Surgery.*
S. Henry Dickson, M. D.,	*Professor of Institutes and Practice of Medicine.*
James Moultrie M. D.,	*Professor of Physiology.*
Thomas G. Prioleau, M. D.,	*Professor of Obstetrics.*
C. M. Shepard, M. D.,	*Professor of Chemistry.*
Henry R. Frost, M. D.,	*Professor of Materia Medica.*
E. Geddings, M. D.,	*Professor of Pathological Anatomy and Medical Jurisprudence.*
F. Wurdemann, M. D.,	*Demonstrator of Anatomy.*

—

Cincinnati College.—The Medical Department in this College has been suspended.

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Louisville Medical Institute.—This Institution is strengthened by the acquisition of Dr. Daniel Drake, late of the Cincinnati Medical College, for whom a new Chair has been created, that of Clinical Medicine and Pathological Anatomy.

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Columbian College, Washington, D. C.—The Medical Department of this Institution has recently been reorganized, and the Lectures will hereafter commence on the first Monday in November, annually, and continue until the 1st of March. During this period, full courses will be delivered on the various branches of medicine, by

Thomas Sewall, M. D., Professor of the Principles of Pathology, and the Practice of Medicine. Thomas P. Jones, M. D., Professor of Chemistry and Pharmacy. Harvey Lindsly, M. D., Professor of Obstetrics, and the Diseases of Women and Children. Thomas Miller, M. D., Professor of the Principles and Practice of Surgery. John M. Thomas, M. D., Professor of Materia Medica and Therapeutics. John Frederick May, M. D., Professor of Anatomy and Physiology; late Professor of Surgery in the University of Maryland.

—

University of Virginia.—Dr. R. E. Griffith, we regret to state, has been compelled to seek restoration of his health, impaired by excessive labour, in a tropical climate; and to resign the chair, which he filled with so muchcredit to himself, and advantage to the school. This is a loss, which the University will not readily supply.

—

Washington University of Baltimore.—From the printed circular of this Institution, it appears that fifty-three medical students matriculated the last session, (1838-39;) and at the close, that the degree of M. D. was conferred on seventeen of them.

Medical College of Philadelphia.—The following is the act for incorporating this college, passed at the last session of the legislature of Pennsylvania, and which has now received the approbation of the executive:

Sec. 1. [This we omit, as it contains merely the usual provisions creating the corporation.]

Sec. 2. The objects of the corporation hereby created, shall be: to cultivate the science of medicine, and all its collateral branches; to encourage the prolongation of the term of study, and the increase of the extent of preliminary knowledge required of candidates for medical honours; to designate such courses of instruction, as from time to time may be deemed necessary for the advancement of the science, and the elevation of the medical character; and to examine and decide on the qualifications of candidates for medical degrees.

Sec. 3. The officers of said college shall be a president, two vice presidents, a corresponding secretary, a treasurer, a recording secretary, and such other officers as shall be provided for by the by-laws; and said officers shall be elected by the members of said corporation, at such times, in such manner, and for such terms as shall be provided for by the by-laws. And said corporation shall have power to enact by-laws for the government, admission and expulsion of members: *Provided always*, That no organized faculty of professors or teachers shall ever be established by the authority of said college, unless some other collegiate institution or institutions, now or hereafter established within the city of Philadelphia, shall enact laws interfering with the attendance of any medical student upon such course or courses of medical instruction, delivered by authority of such collegiate institution or institutions as said student may prefer or select.

Sec. 4. Said collego shall have power to grant the degree of bachelor of medicine to any such persons as shall have completed a course of study, similar to that usually required of candidates for the degree of doctor of medicine in other colleges in this state.

Sec. 5. Said college shall have power to grant the degree of doctor of medicine to any persons, who shall have fulfilled the requisites hereinafter mentioned, with such others as from time to time may be prescribed by the by-laws.

Sec. 6. Each candidate for the degree of doctor of medicine in said college, shall have attained the age of twenty-two years; he shall have pursued the study of medicine for the term of at least three years, under the direction of one or more graduates in medicine; he shall have attended lectures in the city or county of Philadelphia, on each of the following branches, or on such subdivisions thereof as shall be deemed collectively equivalent thereto, delivered by lecturers recognized by said college, and shall have attended the same to the number of courses herein designated, and upon each course for a period of four months: anatomy, general and special, two courses; chemistry, one course; natural philosophy, one course; physiology and pathology, two courses; materia medica and pharmacy, two courses; special therapeutics, two courses; institutes and practice of surgery, two courses; obstetrics, two courses; diseases of women and children, one course; medical jurisprudence, one course. He shall also have pursued at least one course of dissections, under the directions of a teacher recognized by the college; and shall have attended for at least one year the practice of some hospital, containing not less than fifty beds, and in which clinical instruction is given. He shall also, produce to the college satisfactory evidence, that he possesses a good moral character.

Sec. 7. The degrees herein mentioned, shall be granted on such terms and in such manner as shall be prescribed by the by-laws, conformably to the foregoing sections; and all fees, received from persons applying for degrees, shall be distributed and applied in such manner as shall be provided for by the by-laws.

Sec. 8. The legislature may, at any time, alter, amend, or repeal the privileges hereby granted.

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TO READERS AND CORRESPONDENTS.

The following works have been received:—

Anatomical, Pathological and Therapeutic Researches on the Yellow Fever of Gibraltar of 1828. By P. Ch. A. Louis, Physician to the Hotel Dieu, &c. From observations taken by himself and M. Trousseau, as members of the French Commission, at Gibraltar. Translated from the manuscript by G. C. Shattuck, Jr., M. D., Member of the Society for Medical Observation at Paris, &c. Boston, 1839. (From the translator.)

A Report on the History and Causes of the Strangers' or Yellow Fever of Charleston; read before the Board of Health. By Thomas Y. Simons, M. D., Chairman of the Board. Printed by order of the Board. Charleston, 1839. (From the author.)

The American Almanac, for 1840, designed for the daily use of practising physicians, students and apothecaries, &c. By J. V. C. Smith, M. D., editor of the Boston Medical and Surgical Journal, Vol. II, continued annually. Boston, 1840. (From the author.)

Medical Report of the House of Recovery and Fever Hospital, Cork street, Dublin, for two years, from 1st January, 1837, to 31st December, 1839. By G. A. Kennedy, A. M., M. D., Member of the Royal Irish Academy, President of the College of Physicians, &c. Dublin, 1839. (From the author.)

An Account of the Yellow Fever which appeared in the city of Galveston, Republic of Texas, in the Autumn of 1839, with cases and dissection. By Ashbell Smith, M. D., Ex-surgeon General of the Texian Army. Galveston, 1839. (From the author.)

An Introductory Lecture, delivered at the opening of the Medical Department of the Columbian College, November 4, 1839. By J. F. May, M. D., Professor of Anatomy and Physiology. Washington, 1839. (From Dr. Sewall.)

Report of Experiments on the Action of the Heart. By C. W. Pennock, M. D., Physician to the Philadelphia Hospital, Blockley, and E. M. Moore, M. D., late Resident Physician to the Frankford Asylum; read before the Pathological Society of Philadelphia, November 4, 1839. Philadelphia, 1839. (From Dr. Pennock.)

The Nurse's Guide, containing a series of instructions to females who wish to engage in the important business of nursing mother and child in the lying-in chamber. By J. Warrington, M. D., Lecturer on Practical Obstetrics. Philadelphia, 1839. (From the author.)

A Report of the Origin and Cause of the late Epidemic in Augusta, Ga., submitted to a meeting of the Physicians of Angusta, on the 10th of December, 1839. (From the committee.)

Circular of the Vermont Academy of Medicine, for the session of 1840. (From Professor Bryan.)

Remarks on the Medicinal Springs of Virginia. By George Hayward, M. D.; read before the Boston Society for Medical Improvement. Boston, 1839. (From the author.)

Introductory Lecture before the Albany Medical College, delivered October 1, 1839. By Gunning S. Bedford, M. D., of New York, Professor of Obstetrie Medicine, &c. Published at the request of the class. Albany, 1839. (From the author.)

Introductory Lecture before the Albany Medical College; delivered October 1, 1839. By David M. Reese, M. D., Professor of Theory and Practice of Physic. Published at the request of the class. Albany, 1839. (From the author.)

The Pains and Pleasures of a Medical Life, being an introductory to a course of lectures on Materia Medica and Therapeutics. Session 1839, '40. By Thomas W. Mitchell, M. D., Professor of Materia Medica and Therapeutics in Med. Dep. Trans. Univ. Published by the Medical Class. Lexington, Ky., 1839. (From the author.)

Introductory Lecture before the Albany Medical College. Delivered November 12, 1838. By Thomas Hun, M. D., Prof. Institutes of Medicine. Published by request of the class. Albany, 1839. (From the author.)

Introductory Lecture before the Surgical Class of the College of Physicians and Surgeons, Fairfield, N. Y. Delivered Dec. 3, 1839. By Frank H. Hamilton, M. D., Prof. of Surgery. Published at the request of the class. Albany, 1839. (From the author.)

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THE

AMERICAN JOURNAL

OF THE

MEDICAL SCIENCES.

ART. I.—*Report of the Surgical Cases treated in the Pennsylvania Hospital, during the months of July, August, September and October*, 1839. By GEORGE W. NORRIS, M. D., one of the Surgeons to the Hospital.

FROM the 1st of July, 1839, to the 1st of November, following, there were admitted into the surgical service of the Pennsylvania Hospital 197 patients. Of this number 101 were discharged cured; 27 were relieved, removed by friends or eloped; 18 died; and 51 remained under treatment on the 1st of November. The diseases admitted and number of each are shown in the following table:

Abscess	3	Fracture of cranium	2
Apoplexy	1	Fracture of spine	1
Burns and scalds	8	Fracture of clavicle	5
Bladder, inflamed	1	Fracture of arm	2
Cancer of mamma	1	Fracture of neck of humerus	1
Caries of nose	1	Fracture of elbow	1
Caries of knee	1	Fracture of fore-arm	6
Cataract	1	Fracture of thigh	5
Compound dislocation of finger	1	Fracture of neck of thigh	1
Concussion of brain	2	Fracture of leg	6
Contusions	28	Fracture of ribs	2
Cornea, ulcers of	2	Fracture of bones of foot (comp.)	3
Dislocation of shoulder	1	Un-united fracture of thigh	1
Dislocation of jaw	1	Un-united fracture of forearm	1
Dislocation of clavicle	1	Fungoid tumour of tibia	1
Epistaxis	2	Furunculus	1
Eye, fungus hæmatodes of	1	Hæmorrhoids	1
Fistula in ano	1	Hernia, strangulated	2

Inflammation of ankle	2	Ruptured ligament of patella	1
Inflammation of leg	1	Sprain	1
Inflammation of knee	3	Stricture	2
Inflammation of thigh	1	Syphilis	21
Inflammation of glands of the neck	1	Syphilis, secondary	4
Inflammation of inguinal glands	1	Testes, enlarged	2
Necrosis	1	Tonsils, enlarged	2
Ophthalmia	4	Tumours	2
Orchitis	3	Ulcers	5
Osteo-sarcoma of foot	1	Ulcers, varicose	1
Poisoned by laudanum	1	Ulcers of throat	1
Porrigo	1	Wounds, incised	7
Prostate, enlarged	1	Wounds, lacerated	20
Psoriasis	2	Wounds, punctured	1
Retention of urine	1	Wounds, gunshot	4

The annexed table will make known the injuries or diseases which terminated fatally, together with the age of the patients, the period survived after entrance into the hospital, and the immediate cause of death.

Disease for which admitted.	Age.	Period survived.	Immediate cause of death.
1. Comminuted fracture of clavicle.	31	4 days.	Delirium tremens.
2. Incised wound of head.	33	5 days.	Delirium tremens.
3. Lacerated wounds of arm and leg.	35	4 days.	Delirium tremens.
4. Caries of bones of the nose.	26	14 days.	Inflammation of the brain
5. Compound fracture of fore-arms, injured head and lacerations.	67	Less than 24 hours.	Compression of the brain.
6. Fractured spine.	46	9 days.	Peritonitis and pleurisy.
7. Gun shot wound.	30	8 days.	Erysipelas.
8. Compound fracture of cranium	16	60 days.	Abscess of the brain.
9. Cataract.	65	34 days.	Apoplexy.
10. Gun shot wound.	15	Less than 24 hours.	Effects of injury.
11. Burn.	2	Less than 24 hours.	Burn.
12. Fractured thigh.	40	7 days.	Delirium tremens.
13. Fractured thigh.	39	3 days.	Delirium tremens.
14. Fractured thighs and ribs.	27	Less than 24 hours.	Effects of injury.
15. Burn.	4	Less than 24 hours.	Burn.
16. Compound fracture of cranium, arm and jaws.	25	3 days.	Effects of injuries.
17. Fungus hæmatodes of eye.	7	76 days.	Fungus hæmatodes.
18. Strangulated hernia.*	58	Less than 24 hours.	Strangulated hernia.

During the term the following operations were performed.

Disease or injury.	Age.	Operation.	Result.
1. Lacerated and fractured foot.	60	Amputation of leg.	Cured.
2. Luxated humerus of 3 months.	59	Attempted reduction with pulleys.	Failure.
3. Lacerated and fractured foot.	5	Amputation of leg.	Cured.
4. Cancer of mamma.	61	Extirpation of mamma.	Cured.
5. Fibrous tumour of calf of leg.	66	Extirpation of tumour.	Cured.

* This patient was in a dying state when admitted and was not operated on.

Disease or injury.	Age.	Operation.	Result.
6. Comminuted fracture of leg.	40	Amputation of leg.	Cured.
7. Hand torn off by machinery.	28	Amputation of fore-arm.	Cured.
8. Fistula in ano.	24	Division of fistula.	Relieved.
9. Encysted tumour.	23	Extirpation of tumour.	Cured.
10. Dislocated Jaw.	63	Reduction.	Cured.
11. Enlarged tonsils.	16	Excision of tonsils.	Cured.
12. Compound fracture of arm.	32	Amputation of arm.	Cured.
13. Lacerated and fractured foot.	25	Amputation of leg.	Convalescent.
14. Osteo-sarcoma of foot.	47	Amputation of leg.	Cured.
15. Fungous tumour of tibia.	33	Amputation of thigh.	Cured.

Of the eight amputations, four were rendered necessary in consequence of the passage of railroad cars over the limbs. The injuries received on these roads form the most severe class of accidents which are admitted into the hospital, and the majority require immediate amputation; their number has been gradually augmenting for some years past, and owing to the increase of railroads in the neighbourhood of the city it is to be feared that this will still continue to be the case. In the amputations the common circular operation was in all cases performed, modified, however, for the leg, by carrying the incision through the integuments a little lower behind on the calf of the leg than in front.

Fractures.—The number of fractures admitted during the term were fewer than usual; the following are the most interesting which came under notice.

Fracture of the Neck of the Os Humeri.—James Orr, ætat. 20, very muscular, was admitted, August 16th, for an injury of his right shoulder, produced by a fall into a cellar on the preceding night. On examination the whole shoulder was found to be severely contused, tumefied and much discoloured from effusion of blood. There was an inability to raise the arm from the body; the acromion and clavicle could be traced in their whole extent and were found to be uninjured; upon seizing the shoulder with one hand and carefully rotating the arm with the other, very distinct crepitus could be perceived. The arm could be readily moved in all directions and brought down closely in contact with the body. The patient stated that immediately after his accident the extremity had been well pulled, in the belief that the bone was dislocated, and was suffering severe pain at the period of admission. The limb was supported in a sling and ℥iv. of blood were taken from the part by means of leeches.

17*th.* Less pain since the leeching; swelling not increased; the shoulder to be gently bathed with lin. saponis several times during the day.

On the 18th all pain had ceased; by the 20th the swelling had greatly diminished; to-day the arm was removed from the sling and a roller applied from the hand upwards; three pasteboard splints were then adjusted on the back, outer side and front of the arm, which being secured by the remainder

of the roller, a pad was placed in the axilla and the arm fixed to the chest by means of a bandage passed around the trunk, the fore-arm being supported in a sling. This treatment was continued till the 14th of September when union was found to be perfectly firm and the splints were omitted. On the 18th he was discharged cured.

Fracture of the Spine.—Isaac Clark, ætat. 46, was admitted, August 7th, for an injury of the back. A short time previously he had placed himself on the top of a railroad car, in the car house, and when the car was drawn out, his body was in some way caught under the door of the house and he thinks was bent backwards. Immediate paralysis of the lower limbs followed. Upon admission a well marked depression was observed at the lower part of the dorsal vertebræ and the integuments of the whole upper spine were much excoriated. He was placed upon his back and had his bladder, which was distended, emptied by a catheter. Previous to admission he had been freely bled. On the following day, some tympanitis of the abdomen existed, and he complained greatly of pain in his back; a common enema was administered, and six cups were applied on either side of the spine; the catheter was used every 12 hours.

10*th.* States that he was much relieved by the application of the cups. 12th. Early to-day he had a severe chill which was followed by fever; pulse 124; abdomen swelled and painful on pressure; bowels were moved freely yesterday and this morning by a mild cathartic; mist. neutral ℥ss. q. h. with a small quantity of calomel and Dover's Powder every four hours, warm fomentations to abdomen.

13*th.* Pulse upwards of 130; abdomen more swelled and painful; had another severe chill this morning; treatment continued, a warm flaxseed poultice being exchanged for the fomentations. From this date till the 16th, the day of his death, he continued with little or no change; the same treatment was continued with the addition of a portion of sulph. morphiæ at night.

Autopsy, nineteen hours after death.—Upon laying bare the spine in its posterior part, the fracture was found to be at the ninth dorsal vertebra, the spinous process of which was driven in upon the canal. Severe contusion and effusion of blood in the parts around existed. Upon cutting into the abdomen the intestines were found to be highly distended with gas and the peritoneum inflamed about the seat of fracture. This was seen to extend obliquely through the body of the bone in such a way as to cause the upper part of the spine to project forwards considerably and press upon the spinal marrow. The spinal canal was opened and the cord for some distance above and below the seat of injury was removed. Its membranes were not ruptured. The medullary substance at the point of fracture was found to be soft, pulpy and discoloured. Upon making a section of it, numerous minute red points were seen for some distance above and below the seat of injury. Old adhesions of the pleura of the right side, and extensive recent adhesions

of that of the left, with effusion of puruloid serum, were found. The mucous coat of the bladder was in a high state of inflammation.

Compound Fracture of the Cranium with Protrusion of the Brain, terminating fatally on the sixtieth day from Abscess of the Brain.—John Flood, ætat. 16, was admitted on the morning of the 1st of July, with a compound fracture of the cranium. He was an attendant upon a machine worked by steam for planing iron, and while in the act of stooping down to arrange some part of the works, having previously arrested its motions, he accidentally set the machine to working, and before he could be disengaged from it, his head was pushed gradually up against a projecting bolt firmly fixed into the iron plate upon which the plane moved. This bolt, which was square at its projecting extremity and measured three quarters of an inch on either side, entered the fore part of the head to the depth of an inch and a half. From this situation the workmen attempted to extricate him, but finding this impossible, separated the bolt, together with a heavy piece of iron to which it was attached, from the machinery, leaving it firmly fixed in the skull. Attempts were then again made by the foreman of the shop, to remove the bolt, but without success, and a medical gentleman in the neighbourhood was sent for. The opening in the forehead was of such small extent that it was found necessary to enlarge the wound in the soft parts slightly at its corners, and afterwards to turn the bolt until its angles corresponded to the corners of the wound before it could be withdrawn. Two or three small portions of bone which had been driven in upon the brain were removed after the withdrawal of the bolt. At the visit soon after his entrance into the hospital, the seat of injury was found to be at the anterior part of the frontal bone an inch above the orbitar ridge, and a little to the left of the middle line. At this point a portion of brain, judged to be nearly equal in size to a large walnut, was protruding and much lacerated. The patient was sensible and complained of no pain; pupils natural; pulse slow and feeble; is unable to raise the right arm from the bed, though he is able to close his fingers feebly, and has perfect sensation in it; no paralysis of any other part of the body. He was placed on his back with his head elevated, and the wound covered with a pledget of lint, without any attempt being made either to return or remove the protruding brain, and ice-water was applied to the forehead.

July 2d. Is stated by his friends, who remained with him, to have had a slight wandering of the mind during the night, but at time of visit his mind was in no way disordered. Pulse not frequent, and but moderately full; skin warm. Venesection; mist. neutral. with gr. 1-16 antim. tartar. every two hours. Cold to head continued. Absolute diet.

3*d.* Makes no complaint, Passed a good night. Face rather more flushed than it has yet been; pulse 80; skin pleasant; no inflammation about the wound. Protruding portion of brain has in a great measure disappeared.

Paralysis of arm has neither increased nor diminished. But a small quantity of blood was taken from him yesterday. The tartar emetic in the neutral mixture produced sick stomach and is omitted. To take a purge of extr. colocynth comp. and calomel āā grs. v.

4*th*. Pulse 60 and without much force. No delirium. Medicine has not yet operated. Treatment continued with the addition of an enema.

5*th*. Bowels freely moved yesterday. Senses perfect. Pulse 60. Wound continues to look well, being free from inflammation. Slight discharge of pus from its edges and surface. Diet, cold to head and mist. neutral. continued; extr. colocynth comp. and calomel to be repeated this evening.

9*th*. To-day is able to raise the right fore-arm partially from the bed; with this exception no material change has occurred since the last report. Pulse 64; tongue clean. A very moderate discharge of pus from the edges of the wound, which is not inflamed or sore to the touch; the centre of the wound is covered with a slight slough. Demands food, and thin arrow root is allowed in addition to gruel and barley water. The treatment has been continued, with calomel and colocynth every other night.

12*th*. Complained yesterday of pain over his eyes, which was entirely removed by a free discharge produced by his purge. To-day all his symptoms continue good. Edges of the wound are healthy, though the centre of it appears still sloughy. The discharge from it is slight and of thick yellow pus.

15*th*. Has complained on two or three occasions since the last report of pain over his eyes and giddiness of the head, but this has always passed off in a short time. The cold to head, neutral mixture and purging every other day are continued. There has been no improvement in the arm since the 9th. Wound is not inflamed. There is now but a slight rising at this point above the level of the bone. Discharge from it has increased and continues thick and yellow. Mind perfect.

18*th*. General symptoms continue good; has to-day more power over the fore-arm, but is not able to raise the arm completely from the bed. The slough has entirely separated from the wound, which is covered with red, healthy looking granulations. Large discharge from it of healthy pus. To-day the purge of calomel and colocynth was stopped and mass. ex hydrarg. grs. iij was given thrice daily.

On the 19th the paralysis had entirely left the arm and he was able to raise it completely from the bed. From this date up to the 18th of August the patient continued to do well, the wound presenting a healthy appearance and cicatrization progressing slowly. On the evening of the day mentioned he was seized with a chill followed by fever, pain in the head and diarrhœa. On the 19th I found him complaining of pain in the head, with a flushed face and a pulse of 116; pupils natural; discharge from the wound much increased. Venesection to ℥viij. at which time he became weak; poultice to wound; no effort to check the diarrhœa was made.

20*th.* No return of chill; head easy; pulse 88. On the 21st the discharge was in a much less quantity, and from this time up to the 30th, the day of his death, continued to be very trifling. A day or two previous to death his memory was slightly affected, and he was observed to sleep sounder and more than he had previously done; no paralysis. Early on the morning of the 29th he was much as he had been on the previous day, but at mid-day was found to be in a state of profound stupor with the pupil of the right eye strongly contracted, while that of the left side was dilated. In this state he continued till early in the morning of the 30th, when he died.

Autopsy nine hours after death. The wound in the head was one and a half inches above the orbitar ridge. A small piece of bone was driven in and pressing upon the brain. The dura mater around the wound was thickened and strongly adherent to the brain. The anterior lobe of the left hemisphere of the brain was of a bluish yellow colour, softened and presenting evident fluctuation. The vessels of the pia mater were much injected; an abscess was found immediately beneath the dura mater at the point at which it was adherent to the brain, occupying the whole anterior lobe and filled with thick yellow pus—thought to amount to ℥v, or ℥vi. The walls of the abscess were lined by a thick false membrane of a grayish colour. The cerebral matter around it was of a light yellowish colour and softened. A portion of the internal table of the bone, about an inch and a quarter in length, was found driven in beneath the sound bone at the upper part of the wound, and at the side of it, a small fragment was found firmly attached to it. The opposite hemisphere of the brain presented the natural appearances; the ventricles were much distended with serum; the edges of the fractured bone were rounded off and perfectly smooth. No further examination was permitted by his friends.

The frequent occurrence of abscess of the brain after fractures of the cranium is well known. The above instance, however, is a little remarkable from the large size which the abscess had attained, as well as from the length of time the patient survived after the accident, free from all unpleasant symptoms. The knowledge that the loose portions of bone had been removed immediately after the accident, and the entire freedom from all symptoms of compression of the brain, were sufficient to prevent a resort to any operative procedure. In order to guard against inflammation of the brain, our chief dependence, after a state of perfect quiet and low diet, was in moderate venesection, the application of cold, and steady purging. The disappearance of the paralysis of the arm, and the entire absence of every unfavourable symptom, would have encouraged me to look forward to recovery but for the recollection of the termination of all similar injuries with escape of brain, which I had seen. The following notes of a case which I took while resident surgeon in the hospital, in which the patient lived more than four months after the accident, is somewhat similar to the

above, and taken in connection with it is well calculated to show the extreme caution in prognosis necessary after like injuries.

William Malone, ostler, ætat. 34, was admitted, December 3d, 1832, under Dr. Hewson, for compound fracture of the cranium with depression of the bone. His injury had been produced two hours before admission by a blow over the right side of the head with an axe. The wound in the scalp was four inches in length, and a fracture with some depression of the bone existed. The physician who saw him previous to admission stated that a small portion of brain had escaped from the wound. He had lost a large quantity of blood, and had no symptom of compression of the brain, or uneasiness of any kind about his head. The lips of the wound were brought together with adhesive plaster, and cold was applied to his head.

Under a very rigid antiphlogistic treatment he did well till the 13th, when he was observed to sleep more than usual, and when aroused said that his head felt heavy and painful. No inflammation existed around the wound which had partially united. Thin pus was discharged from it, and it had for some days previously been dressed with a poultice. Cups were applied to his temples and back of the neck, and he was purged with salts and put upon the use of nitrous powders. He stated that some relief had been afforded him by the cupping, though on the 14th he complained of his head being still heavy, and slept a great deal and heavily. His pulse had become slower (60); skin dry and warm. The dose of salts was repeated, and nitrous powders continued.

15*th*. More stupid than yesterday, but can be easily roused; complains of pain across his forehead; pulse and skin as yesterday; the whole head was shaved and a blister applied to it, and the following solution given in ounce doses in place of the nitrous powders: ℞. antim. tartar. grs. ij; sulph. magnes. ℥i; aq. fluvial, ℥vii.

On the 16th he continued much the same, but on the 17th was better, being free from pain in the head and sleeping less; the blister discharged freely.

By the 20th the blister had healed and he had no return of pain in the head.

On the 22d I discovered that he had not complete power over his left arm, and he stated that he had not had for two days previously; no headache; discharge from wound less. He continued to improve from this date till the 8th of January, 1833, when he complained of pain in his forehead, for which he was cupped and purged with relief. By this time he had completely regained the use of the left side.

On the 9th he had a return of the pain, and he again lost the use of the left arm. The pain was again removed by cupping and purging, and two days after he had partially regained the use of the member.

On the 16th a piece of the outer table of the bone, an inch in length, was found to be loose within the opening and was removed.

On the 23d he was suffered to walk about the ward and had his diet

slightly increased; the wound had healed with the exception of a fistulous orifice leading to the seat of fracture. His mind was perfect; he suffered no pain, but had only an imperfect use of the arm of the left side.

He continued, as at the last report, until the 26th of March, when he was seized suddenly with a convulsion; for this, cupping and cold to the head were again resorted to with relief. The fistulous opening still remained from which there was daily a discharge of pus.

In consequence of this attack it was judged proper to cut down to the bone and ascertain whether or not any fragment pressed upon the brain; this was accordingly done, but no projecting portion was discovered. No material change took place from this time till the 2d of April, when he complained of headache which was in a short time followed by vomiting, insensibility, and death on the same day.

Upon examination, eighteen hours after death, it was found that the internal table of the fractured portion of bone had been driven under the sound bone, and had become firmly adherent to it; and that an abscess occupying the greatest portion of the anterior and middle lobes of the brain, existed on the right side of the head, communicating with the external wound and lateral ventricle.

Un-united Fracture of the bones of the Fore-Arm of four weeks standing. Treatment by perfect rest and pressure—Cure.—Henry Baldwin a healthy boy, ætat. 12, was admitted July 31st. His mother stated that his accident had been produced by a fall four weeks previously, and that his arm had been attended to by a physician in the country. Upon examination, the fracture was found to be near the middle of the fore-arm; neither of the bones had united, considerable deformity existed, from bending of the bones outwards, and the integument was slightly ulcerated over the projecting ulna. The fore-arm was secured to a splint extending from the elbow beyond the fingers, and as much pressure was made over the projecting fragments, as the patient was able to bear. At first the bandage was removed, and the pressure reapplied daily, and after a short time every second or third day. By the 20th of August, perfect union had taken place, and the limb had become much straighter. Pressure and the splint however was continued till the 4th of September, and on the 28th he was discharged perfectly well, and with a very slight deformity at the part.

Un-united Fracture of the Femur of seven months standing—Treatment by rest and compression.—Michael Ward ætat. 50, and enjoying good general health, was admitted, September 14th, with an un-united fracture of the femur. He states that he received his accident in the middle of last February, by the fall of a bank of earth upon the limb. His left femur was broken obliquely in its lower third, together with both bones of the leg of the same side a short distance below the knee. After a treatment of seven or

eight weeks, with long splints (probably Desault's) he was suffered to get up and move about, the union of the bones of the leg being firm, though somewhat deformed, while the thigh was much deformed and un-united. In August he set out from Ohio for Philadelphia and performed one half the distance on foot, with the aid of crutches. On admission, the left limb was found to be two and a half inches shorter than that of the opposite side. The lower part of the thigh was enlarged owing to a great mass of callus which had been thrown out around the seat of fracture, and was much bent outwards, the lower fragment being drawn to the outer side of the limb. When placed in the erect position he was unable to bear any weight upon the limb, and upon attempting to do so the motion of the lower upon the upper fragment, was very evident both to the patient and observer. Strong extension had no effect in bringing down the limb to its natural length, and all that was proposed by the treatment was to produce union of the fragments, and if possible a diminution of the deformity, by rest and pressure, without attempting to remedy the shortening. For this purpose a roller was applied from the toes upwards, after which strong pressure was made over the projecting portions of bone by means of a bandage secured to a well padded long splint placed upon the inner side of the limb. This apparatus was continued until October 14th, the bandage being tightened every few days. At this date the limb was found to be free from swelling, and the deformity evidently less. Union also appeared to be firmer. The apparatus was reapplied, and in order to keep up as much pressure as the patient was able to bear, a tourniquet was applied immediately over the point of fracture. On the 31st of October the apparatus was removed for the purpose of accurate examination, and it was found that the limb was lengthened half an inch since the commencement of the treatment; that the deformity was less, apparently from absorption of a portion of the callus which had been deposited on the outer part of the limb, and that no motion could be discovered at the point of fracture, or any grating sensation perceived when the weight of the body was borne upon it.

In the first of the above cases, absence of union may be attributed to want of proper treatment, the splints having been so applied as not to keep the parts in a state of perfect rest. In the second instance the treatment had been also defective, as was shown by the great deformity which had occurred at the seat of fracture, but whether want of union in the fragments can be set down altogether to this cause is doubtful; the fracture of the leg which occurred on the same side having united firmly, though subjected to precisely the same treatment as that of the thigh. Where more than one fracture occurs in the same person we not unfrequently observe firm union to take place in one, some time before the same process is completed in the other, and it is probable that, had a state of rest been continued for a short time longer the bones would have firmly united. The practice pursued in both instances of making pressure over the part and putting the extremity at

perfect rest, is that best adapted to cases of un-united fractures which have existed but for a few months, and should be always resorted to in young persons, or cases of the kind mentioned, previous to performing any of the more serious operations which have been proposed for this accident. Where pressure directly over the seat of fracture is made use of, the tourniquet is, I think, preferable to the roller, as by means of the screw, a more equable degree of pressure can be kept up, and if pain or other unpleasant symptom follow its application, can be loosened without putting the surgeon to inconvenience.

Rupture of the Ligament of the Patella.—James Hughes, ætat. 30, was admitted on the evening of July 13th, for an injury of the knee received a short time previously by a fall from a height of eight feet into a well. He states that his limb was strongly flexed at the time of the fall, and that he struck the ground with his knee. Though suffering great pain he was able to seize a rope which was lowered to him, and allow himself to be drawn up to the surface, but on attempting to rise upon his feet he found that he was unable to support himself on his left limb. He was immediately removed to the hospital, where upon examination by the resident surgeon, a hollow was observed over the knee which on first sight was supposed to result from fracture of the patella, and separation of the fragments, but which on close examination was seen to proceed from a rupture of the ligament of the patella and a consequent displacement of that bone upwards. On the following morning, when I examined the limb, although some swelling had occurred, I found a deep depression existing immediately above the tubercle of the tibia, and the patella drawn up to the extent of an inch and a half. This bone admitted of a much greater degree of lateral motion than that of the sound side, could be distinctly traced, and was found to be uninjured. The treatment consisted in extending the limb upon a splint, and applying a roller from the foot upwards, which was passed around the knee in such a manner as to draw down the patella towards the head of the tibia. The limb was then placed on an inclined plane, and cold applications applied over the knee. On the 15th, as a good deal of swelling and pain existed, leeches were applied to the part; after this date under the use of extension and a bandage with an evaporating lotion to the knee, the patient continued to do well. On the 27th, he left the house at his own request, preferring to be at home with his family. The patella at the time of his discharge was occupying its natural position, and a considerable hardness could be felt in the space between its lower edge and the tubercle of the tibia.

So strong are the fibres of the ligamentum patellæ as well as its attachment to the tubercle of the tibia, that it most generally happens that the patella itself gives way sooner than a rupture of this ligament shall occur. The above, however, is a well marked example, in which the contrary had place giving rise to that rare form of accident, dislocation upwards of the patella.

The rupture was in this case evidently not produced by muscular contraction alone, though it is more than probable that the strong contraction of the muscles of the leg during the fall, aided materially in its production.

Comminutive Fracture of the Fore-arm, with simple fracture of the arm of the same side; lacerated wound of the foot with fracture of two of the metatarsal bones.—Partial dislocation of the patella outwards, accompanied with rupture of the internal lateral ligament of the knee and partial rupture of the ligamentum patellæ.—John Scanlin, ætat. 32, of temperate habits, was admitted on the evening of August 27th, in consequence of injuries received a short time previously from becoming entangled in machinery worked by steam, while attempting to place a belt upon a drum. The most serious injury which he suffered was in the left upper extremity, the humerus of which was fractured near the insertion of the deltoid, at the same time that a comminuted fracture of both bones of the fore-arm existed about the middle, accompanied with extensive laceration of the integuments and muscles. In addition to this, there was a lacerated wound three or four inches in length on the dorsum of the right foot, accompanied by fracture of two of the metatarsal bones. He complained greatly of the knee of the left side, and upon raising the limb and seizing firmly the lower extremity of the femur, the leg could be pushed considerably outwards, and a separation between the internal condyle of the femur and head of the tibia sufficient to admit the insertion of the end of the finger, was evident, which disappeared upon the force applied to the leg being discontinued. No fracture of any of the bones existed. The patella was partially dislocated outwards, its outer edge being much raised and resting on the side of the external condyle of the femur, while its inner edge was depressed, and firmly fixed in the hollow between the condyles. A considerable depression existed between the tubercle of the tibia and the lower end of the patella, at the middle and inner side of the knee, evidently produced by a rupture of the ligamentum patellæ in nearly its whole extent. Scarce any swelling of the knee was present. The patient lay with the limb moderately flexed. By extending the limb and making strong pressure upon the upper edge of the patella, the bone could be replaced, but when the force was relaxed, the displacement again occurred; skin moderately warm; pulse 92 and feeble; voice whispering. One hundred and twenty drops of laudanum had been administered in two doses. The left limb was placed in a long fracture box and lead water applied to the knee. The sides of the wound of the left foot were drawn together with adhesive plaster, and the leg put into a fracture box. The severity of the injuries of the arm was such as to render amputation necessary, but as the patient had not reacted sufficiently for the performance of it, the sides of the wounds were simply drawn together, and the limb lightly supported in an easy position. Moderate stimuli and the application of mustard to the extremities had already been made use of, and were continued. On the following morn-

ng Dr. Randolph saw the patient in consultation with me, but not finding him in a condition fit to undergo an operation, amputation was deferred. By the 31st, his general symptoms had so far improved that the removal of the limb was determined on, and was done immediately above the seat of fracture by the circular method. At this time no swelling or redness existed at the knee; the foot had commenced suppurating and was poulticed.

September 1st. Slept well; profuse discharge of bloody serum from the stump; so great as completely to saturate the dressings and pillow upon which it lay. The dressings were removed and loosely reapplied; stump swollen and red; no pain, swelling or inflammation in the knee. The wound in the foot presents a sloughy appearance with redness and swelling around it, and is extremely painful. The leg was removed from the fracture box, and placed on its side upon a pillow, in order to favour the escape of the discharge which collected at the bottom of the wound. Poultice to foot; morphia was freely administered and his diet was increased.

4*th.* Sleeps well; pulse soft, 92; skin pleasant; tongue clean and moist; stump is red and swollen; lips gaping, and a large discharge of healthy pus from it; no swelling, pain or redness about the knee; the foot is still red and swelled around the wound; the slough of which is not yet separating; treatment continued.

6*th.* Had a chill this morning; skin is now hot; tongue dry; the stump is less swollen and red; the wound in the foot is painful with a good deal of redness and swelling around it, and discharges more freely. No inflammation of the knee; the bowels are kept regular by enemas. Mist. neutral. in addition to other treatment,

11*th.* General symptoms good; stump now presents a good appearance; the foot is less swollen but is very painful when disturbed; the wound is now clean, and the granulations present a healthy appearance.

By the 10th of October the stump had healed, and all dressings were omitted. From this date up to the 1st of November, Scanlin continued to improve; at the time of my leaving him, a good degree of motion existed at the knee joint, which was in no way inflamed or painful; the wound of the foot had diminished greatly in size, and was fast cicatrizing, and his general symptoms were good.

Incised Wound of the Wrist with division of the Ulnar Artery; Ligature of both ends of the vessel.—Cure. Augustin Tuistin, ætat. 24, was admitted August 13th, for a small wound on the outer side of the wrist, in which the ulnar artery was divided, produced by a cut with a broken porter bottle. Both ends of the injured artery were taken up, and the wound dressed with adhesive plaster, and the limb secured on a splint. On the 17th, erysipelatous inflammation occurred about the wound which extended above the elbow. The arm was now elevated, and gently bathed with lin. saponis, a poultice

being applied to the wound. In a few days the inflammation subsided, and by the 12th of September cicatrization was perfect, and the patient soon after left the house.

Incised Wound of the Palm of the Hand; Hæmorrhagies three weeks after the accident; ligature of the Radial Artery; return of the Hæmorrhage on the 8th day after its application.—Cure by pressure.—Hugh Lewis, a healthy farmer, was admitted July 22d, on account of hæmorrhage, from a wound in the palm of the hand. He states that four weeks since, he received a cut with the end of a scythe in the fleshy part of the palm about an inch below the end of the radius. The injury was followed by considerable hæmorrhage, which was arrested by means of pressure on the part. The wound from the time of the accident gave no trouble, though it did not cicatrize, until eight days since, when considerable hæmorrhage took place from it. This was repeated at different times during the day, and the following morning he came to the city and applied to a surgeon, who in order to arrest it, secured the radial artery just above the wrist. After this he returned home and continued to do well until the night before his admission into the hospital, when the wound again bled profusely, and was only arrested by making very considerable pressure upon the wrist as well as over the wound. After admission, the pressure which had been hurriedly and irregularly applied, and which caused great pain, was removed, and the wound which was not above half an inch in length was sponged off, but no bleeding took place. The ligature upon the radial artery, had not yet separated; the incision made in order to secure it had not united, and its edges were much swollen and inflamed, as was also the back of the hand. Moderate pressure, by means of graduated compresses and a bandage, was made over the wound and lower part of the ulnar artery, and the hand and fore-arm were secured to a splint and elevated, and cold applied. Tinct. opii, gtts. xl, given, and absolute rest in bed enjoined.

23*d*. No return of hæmorrhage; hand not painful, cold continued.

24*th*. Cold and the elevated position are continued; has been no hæmorrhage; wound not disturbed.

25*th*. Bandage removed; wound suppurating freely. The dressings were re-applied, and the limb again elevated.

On the 27th, the wound was dressed with simple cerate. On the 1st of August the ligature from the radial artery, came away; the wound and ulcerated surface over the front of the radius were nearly closed. Splint omitted. By the 7th, the part was completely cicatrised, and the patient was discharged.

Wounds of the arteries about the wrist or in the palm of the hand, even where apparently trifling, are not unfrequently the cause of much anxiety to the surgeon, and are sometimes followed by unpleasant results. If the wound be large, and the divided ends of the artery from which the hæmorrhage proceeds can be readily come at, the propriety of securing by ligature, both

ends of the vessel is, I believe, conceded by all; but when the wound is so small as to assimilate itself to a simple puncture, or is deep, or accompanied by severe inflammation of the parts around, it is impossible to do this, and the practice generally followed in such cases, where there is a recurrence of the hæmorrhage, is that which was pursued with Lewis, viz: ligature of the vessel above the point of injury. Where the case is recent, this method is mostly successful, but when any length of time has elapsed since the injury, particularly in wounds of the palm, where the anastomoses between the vessels are free, it very frequently fails, the hæmorrhage after a time returning by the inferior end of the vessel. The employment of graduated compression upon the vessels of the fore-arm as well as over the wound, was in the above case fully successful in preventing any return of the hæmorrhage, and is applicable to most similar instances, but in all cases in which this is trusted to, it should be recollected that to ensure success, the pressure must be well and evenly applied, and a state of perfect rest secured to the limb by means of a splint; elevating the limb, too, is a most important matter where this method is pursued.

Luxation of the Humerus of three months standing; unsuccessful efforts at reduction.—David Mercer, weaver, ætat. 59, very muscular, was admitted July 6th for a forward luxation of the head of the humerus of three months standing. He states that the accident was produced by a fall received while carrying a heavy basket on the shoulder, in doing which the arm was necessarily elevated and thrown behind the central line of the body, and the force of the fall was received on the inner and lower end of the humerus. The medical gentlemen who saw the patient after the accident, supposed the injury to be a simple contusion only, and made no efforts to reduce it. The symptoms peculiar to this species of luxation were well marked. A depression existed beneath the acromion, with a general flattening of the shoulder—the elbow was directed backwards, was widely separated from the side, and could not be made to approach the trunk—the arm was shortened about one inch, and there was an inability to carry it inwards. The head of the bone, too, could be plainly felt below the clavicle, and did not admit of a great degree of motion. Although doubtful of success, I thought it proper to make an effort to reduce the bone, and did so on the day of his admission, after making him fully aware of the pain and risk to which he would be subjected in our attempt, as well as the chances of failure. Extension and counter extension were made in the usual manner with the pullies, (downwards and backwards) and the patient's muscular system completely relaxed by free bleeding and the use of tartar emetic, but after continuing a strong degree of force for nearly an hour, occasionally attempting to break up the adhesions by rotating the limb, I desisted, at the request of the patient, from further attempts, and on the 10th, he left the house with the bone unreduced, though with a much greater degree of motion than he had upon entering it.

Injuries of the Hip.—Three cases of faulty diagnosis in affections of the hip came under notice during the term. The first was a case of coxalgia, mistaken for luxation, in a patient ætat. 12, who was brought to us from a neighbouring state. A short time previously, he had been suddenly attacked with lameness in the right limb, which was attributed by his friends to some injury received a short time before in play. Two physicians, who had been called in to see the boy, pronounced him to be labouring under dislocation of the hip, and had made two strong efforts with the pullies to reduce it; but after causing great suffering, they gave up all hope of replacing the bone, and sent him to Philadelphia. The symptoms were all those of disease of the hip joint, in its early stage. The attitude was that assumed by those labouring under coxalgia. The left limb was apparently lengthened, though accurate examination, with the patient placed on his back, and the spinous processes on a line with each other, showed the limbs to be of equal length; the appearance of lengthening being produced solely by an inclination of the spine to that side; the left buttock was flattened, and the motions of the joint were found to be perfect, though executed by the patient with extreme caution, and causing some pain.

The second case was that of a healthy boy, presented for admission, who had been confined to bed, and treated during some months, for fracture of the neck of the thigh bone. His injury had been produced by an empty wagon passing over his limb. Upon examination, his right limb was found to be about two and a half inches shorter than that of the opposite side; the head of the bone could be traced on the ileum, the toes were inclined inwards, and it was clearly perceptible that a dislocation upwards and backwards existed. No pain was produced by the handling of the limb, nor was inflammation, swelling, or any other symptom of disease about the parts present.

The third case happened in our own practice, and was that of a man, ætat. 35, admitted with an injury of the hip, produced by a fall from a height upon the part. Great pain was suffered in any attempt to move the limb, but the usual evidences of fracture of the neck of the bone were absent, and the case was looked upon as one of severe contusion. After some days, however, eversion of the toes and shortening of the limb, which was found to have occurred, left no doubt as to the true nature of the accident. Desault's apparatus was now applied, and the limb drawn down to its natural length. Slight ulceration of the heel, however, followed and prevented a sufficient degree of extension from being kept up, and the patient will have some shortening of the limb.

Although the signs by which luxations and fractures of the neck of the thigh bone may be distinguished from each other, and from simple contusions and diseases of this part, are dwelt upon in all treatises on surgery, and are made out to be readily distinguishable and well marked, yet all practical surgeons are aware of the difficulties of diagnosis sometimes attendant upon the various injuries about the hip upon actual inspection. The true nature

of the injury in these cases is often more evident some hours or days after the receipt of the accident, than immediately after its occurrence, and I am inclined to think that the necessity of close *secondary* examinations, in all instances in which there is room for a doubt as to the nature of the injury, are not sufficiently insisted on. Had careful examinations of the first two of the above cases been made the day following the receipt of the injuries, it is hardly possible that their true natures would have been mistaken, and the symptoms of fracture in the third case were only detected after a lapse of some days, though this injury was at first suspected and the patient attentively examined. It is, however, more particularly where fractures may be suspected that these repeated examinations are demanded.

The following cases of fracture of the hip, which I witnessed a few years ago, are interesting, in connection with those just given, on account of the difficulty of diagnosis, and are well calculated to show the necessity of close and repeated examinations in all injuries of this part.

John Henrick, ætat. 52, was admitted, Nov. 27th, 1831, for an injury of the hip received by falling down a few steps. He complained of excessive pain about the joint, and was unable to rise, or in any way use the limb. Accurate measurement from the anterior superior spinous process to the internal malleolus, showed the limb to be of the natural length. No deformity existed about the joint, no crepitus could be detected, and the toes were not thrown outwards. The injury was looked upon as a contusion only, and rest, and the application of cups were the remedies prescribed.

On the fifth day after his admission he had a severe attack of mania a potu, and during his delirium was out of bed, stood upon and moved his limb considerably. Having recovered from this attack, he was sent back from the room to which he had been removed, to the surgical ward, and it was then found that the limb was shortened a full inch and a half, and the knee and toes everted, though a daily examination of the limb up to the time of this attack showed nothing amiss about it. The case was now supposed to be one of dislocation; but, upon accurate examination, was discovered to be a fracture through the great trochanter.

In January, 1831, another case, very similar to the above, occurred in a patient ætat. 38. When admitted, he had great pain in the hip, but the toes were not everted; no crepitus could be detected, and on accurate measurement, no shortening of the limb was observable. A short time after his entrance, he also was attacked with mania a potu, and on recovery, shortening was discovered. Desault's splints were applied with the effect of counteracting in a measure the shortening, and the man left the hospital on the 20th of April, walking with a stick.

The exact length of the limb on entrance, with the natural position of the foot, and absence of any deformity, or crepitus, led to the supposition, in both of the above cases, despite the great pain suffered, that simple contusions only of the part existed, and this idea was confirmed at the commence-

ment of the attacks of mania a potu, upon seeing the men up and moving about the room; but after recovery from their attacks, the eversion of the foot led to an immediate examination, when the shortening was found to exist, which, in connection with the symptom just mentioned, could only be caused by fracture of the neck of the bone. In both cases the fragments must have been interlocked in such a way as to have prevented any shortening or motion, and so remained till the delirium occurred, when the violent efforts made to use the limb, unlocked the parts, and permitted the lower fragment to be drawn upwards.

Previously to witnessing these cases we had believed it impossible for a patient with fracture of the neck of the femur to walk upon the limb; but upon examining the records of our science on this point, I find that similar instances are noted. Sabatier, in tom. 4 of the *Mémoires de l'Acad. de Chirurg.*, has recorded an instance in which the patient walked home, and even got up the next morning, after an injury of this kind. Desault states that he has seen similar cases. Boyer says that he saw a man who was able to walk with the aid of a stick during several days after a like accident.—Dr. M'Tyer, in the 4th vol. of the *Glasgow Med. Journal* details a case of injury of the hip, which had not confined the patient from her usual occupations, but which was proved upon dissection, three months after, to be a case of fracture within the capsular ligament.

Since the occurrence of the cases I have described, Mr. Syme, in the *Edin. Med. and Surg. Journ.* for 1836, and M. Malle, in his *Clinique Chirurgicale*, have each given a case of fractured neck of the thigh, in which the patients walked some distance after it; and I have myself seen another hospital patient, with a similar fracture, (proved by post mortem examination,) who assured me that he had walked some squares after the occurrence of his accident.

Enlargement of the Tonsils.—Excision.—Cure.—M. J. Rodgers, ætat. 16, enjoying apparently robust health, was admitted, July 14th, for enlargement of the tonsils. She states that for several years past she has been subject to repeated attacks of sore throat—has for a long time observed that her enunciation was constantly becoming more difficult, and has a constant uneasy sensation in her throat, and frequently, when in the recumbent position, difficulty of respiration. Upon examinatiou, the tonsils were found to be considerably enlarged, with a general redness of the back part of the throat. On the day after entering the house, the left tonsil was excised by means of the sector tonsillarum of Dr. Fahnestock. Six days afterwards, the tonsil of the right side was removed. The hæmorrhage resulting from these operations was trifling, and the slight soreness of throat which followed was entirely removed after a few days. She was discharged cured, August 24th.

Cancer of the Breast in a Male.—A. C., ætat. 61, was admitted, July 18th, for cancer of the left mamma. He states that fifteen years since, while

in the act of loading a cart with wood, he was struck in the breast by a heavy log. Soon after this, a small lump, not much larger than a pea, was observed by him at the part, which was hard and apparently loose beneath the skin, and not painful. For some years this never increased; but during the last eight or ten years, when the part was at all pressed upon, or rubbed by his suspender, it would inflame—at times so much so as to induce him to apply a soft poultice to it, which always speedily removed it. During this period, too, it increased very slowly in size. At present, the tumour is about the size of a small apple—is extremely hard, and in no way adherent to the parts beneath—is not painful when handled, and has a small and very superficial ulceration on its outer part. He states that the tumour attained the size which it now has during the last summer, and that the slight abrasion of its surface occurred three weeks since. The skin covering the tumour is in no way discoloured, and but a single lymphatic gland, immediately above it, can be discovered to be enlarged. General health good. Removal of the tumour was recommended, and the operation was done on the 20th; the tumour being surrounded by two elliptical incisions and dissected out. The sides of the wound were brought together with adhesive strips, and covered with lint and a roller. On cutting into the tumour, it was found to consist of a whitish shining mass, almost of the consistence of cartilage, which gave a crying sound when divided by the scalpel, and showed numerous white striated bands running from its centre into the surrounding cellular structure.

The wound united kindly, and by the 18th of September cicatrization was perfect, and a few days afterwards the man left the house.

Tumour on the upper and outer part of the Leg simulating Aneurism. —Ligature of the Femoral Artery.—Supposed cure.—Return of the patient thirteen months after with a Tumour of greatly increased size, occupying the same situation. — Amputation of the Thigh. — Cure.— James Russel, ætat. 32, entered the hospital on the 10th of August, 1838, for a pulsating tumour, seated on the outer and upper part of the left leg. He stated that about six months before, he fell, while walking over slippery ground, and struck his knee against a stone. The fall produced no division of the skin, but caused severe pain; this, however, soon went off, and he continued to work at his business (powder making), until three months previous to applying for advice, when he was obliged to quit his employment on account of pain in the part. Soon after his fall, he noticed a slight swelling on the outside of the leg, a little below the knee, which has been, from the period of its first appearance up to the present time, slowly increasing. The pulsation he states first to have perceived about three weeks after his fall. Upon examination, a flattened, circumscribed, soft, pulsating tumour was found to exist on the outer side of the limb below the knee, and directly over and between the heads of the tibia and fibula. The surface covering it was reddened, but this the patient accounted for by its having been repeatedly

blistered while under treatment in the country. The swelling was hot, and at times painful, even when he was perfectly quiet, frequently being so severe as to awaken him from a sound sleep. The limb was entirely free from œdema, and from the knee down it was hotter than that of the opposite side. The femoral and popliteal arteries of the diseased side, as well as the other superficial arteries, and the heart, appeared perfectly natural. On arresting the circulation in the ham or front of the thigh, all pulsation in the tumour ceased, and by pressure at this time it could be made to disappear, though on allowing the blood again to resume its course, the tumour quickly returned. The heads of the tibia and fibula were painful when pressed upon at the edges of the tumour. The motions of the knee joint were in no way interfered with. The pulsations of the anterior tibial artery near the foot could be readily felt, and were natural. On applying the ear or a stethoscope over the tumour, a strong impulse was received, but no particular sound could be perceived in it. The sound limb over the tubercle of the tibia measured twelve inches, the diseased one at the same point, twelve inches six lines. The tumour itself measured upwards of three inches in its long, and nearly three in its lesser diameter. The general health of the patient was good.

From the situation of the tumour and appearances detailed, the disease was judged to be an aneurism arising either from the anterior tibial artery near its commencement, or from the first branch sent off by that vessel, the recurrent tibial.

The patient was put to bed with the limb supported by a pillow in a fracture box, and moderate pressure was made on the tumour by means of a roller applied from the toes upwards. The pressure, however, the patient was unable to bear, on account of increased pain in the tumour, and was in a short time omitted, and the limb merely kept quiet in a box, with an evaporating lotion to the swelling, the intense heat of the weather preventing an immediate resort to an operation.

By the 20th of September the swelling had increased in size, and its pulsations were much stronger. In consultation it was now determined to take up the femoral artery, which was accordingly done on the 22d. The artery was exposed in the usual manner, in the middle of the thigh, and a ligature passed around it and firmly tied. A small venous branch lying directly over and close to the femoral, as well as a small artery at the upper part of the incision, were opened in exposing the vessel, and were both secured by ligatures. Upon tightening the femoral ligature, the tumour visibly diminished in size, and the skin of the leg became paler. The sides of the incision were brought together with adhesive plaster, and covered with lint, both ends of the ligature hanging out. The limb was enveloped in carded cotton, and gr. $\frac{1}{4}$ sulph. morphiæ was given to him. An hour after the operation he was free from pain, with a pulse of 84. At 6, P. M. pulse 88; has slept most of the afternoon; limb warm as low down as the ancle, no pain; sensation perfect. Gruel and barley water for diet.

23*d*. Passed a good night; pulse 84; skin and tongue moist; the foot and leg of the left side a little warmer than that of the right; lies with his limb on a pillow slightly flexed; some uneasiness in the lower part of the abdomen, which was relieved by a common injection. Rigid diet and perfect rest enjoined. Tumour without the slightest pulsation, and patient states it to have been free from all pain since the operation.

24*th*. Slept a part of the night. Yesterday afternoon and evening was troubled with flatulency, for which carb. potass. and aq. cinnam. were administered and the injection repeated. No pain in the limb, the temperature of which continues rather higher than that of the opposite side; pulse as yesterday. The lint covering the wound in the thigh was removed, and union by the first intention was found to have taken place, except at the points at which the ligatures pass out. The tumour is harder, and free from all pulsation.

25*th*. No pain in the tumour or leg; no pulsation to be felt in the tumour or in the anterior or posterior tibial arteries; limb still rather warmer than that of the opposite side; no fever; slept well; pulse natural.

29*th*. Very slight pulsatory motion can be felt in the anterior tibial and popliteal arteries; no sort of motion exists in the tumour, which is much harder and not painful when examined; temperature of the limb appears to be the same as that of the opposite side; pulse 80; a drop or two of pus continues to be daily discharged from the wound; the limb is still kept on its outer side moderately flexed; a large pillow is to day so placed beneath it as to make pressure upon the tumour.

30*th*. The pressure of the pillow on the tumour caused the whole limb to become very painful during the night, and it was removed. General symptoms continue good.

October 5*th*. No pulsation or pain in the tumour, which is firmer within the last few days than it has yet been. A drop or two of pus continues to be discharged daily from the wound. Slight pressure on the tumour with the pillow has been continued since the 3d. Bowels regular; appetite is good, but his diet is restricted to gruels.

8*th*. (17th day.) For the first time, a very slight movement can be felt in the tumour at its upper anterior part. The lower part of the tumour is very hard, and no sort of motion can be perceived there. No fever or pain in the limb or tumour. No pulsation in the anterior tibial. Diet or position have been in no way changed. Slight compression upon the tumour by means of a bandage from the foot upwards.

9*th*. The femoral ligature came away to day. A very sensible pulsation exists in the tumour, at both its upper and lower parts. No pain in the tumour. About three hours after the application of the pressure yesterday, the patient became so restless and complained so much of pain in the part, that it was removed. The swelling is better, and the skin covering it redder than the rest of the limb. Temperature of the foot and leg is the same as that of the healthy side. Pulse natural. Cold, applied by means of a

compress dipped in ice water and frequently renewed, was put to the tumour, and continued through the night.

10*th*. Pulsation is still very evident in the tumour, but, at its upper part, it has become harder. The application of cold is not productive of pain, and is continued. Rigid diet and rest is still insisted upon.

12*th*. The tumour is harder in its whole extent; pulsation is still to be felt, but is not so strong as it has heretofore been. No pain in the tumour or leg. Pulse 78. Temperature of the limb is good. Ice water continued, and ten drops of tinct. digitalis given three times a day.

14*th*. Pulsation is less distinct, and the tumour is becoming harder. Pressure over the tumour by means of a layer of lint and the bandage of Scultetus, the cold being continued over it.

15*th*. Distinct pulsation cannot now be felt in the tumour, but only a sort of undulatory movement. Bears the pressure well, which is continued, and is increased. Cold continued.

17*th*. (26th day.) No sort of movement can be felt in the tumour, and does not complain of the pressure. Digitalis has not affected the pulse, and is omitted.

18*th*. The tumour continues free from movement, and has much diminished in size. Pressure is re-applied with a thick compress.

From the last date until the 31st of October, the period at which he left the hospital, to return home to Wilmington, Delaware, the tumour continued gradually to diminish in size and become harder, and was entirely free from pain or movement of any sort.

On the 7th of September, 1839, nearly eleven months after his dismission from the hospital, Russel returned to us with a very considerable tumour occupying the upper part of the leg. Above it, the patella and condyles of the femur could be distinctly felt, and were in no way involved in it. The limb was held moderately flexed, and though the patient was unable to extend it, yet some motion existed at the knee. Any efforts at motion were attended with much pain. The tumour was spherical in its general form, and the skin covering it was natural in colour. Numerous large veins were to be seen running over it. To the touch, the tumour in some points was soft and elastic, while in others it was of a bony hardness. This hardness was particularly great over the seat of the old pulsating tumour. The whole swelling was painful upon pressure. No general pulsatory movement existed, though slight pulsation was perceptible in some points when pressed upon, but was believed to arise from some small arteries which could be traced running over its surface. Slight enlargement of a single gland in the groin could be perceived. The general health of the patient continued to be good, though he was considerably thinner than upon his first entrance into the hospital. The circumference of the tumour at its middle part was sixteen inches, and its greatest length was five inches.

On the 16th of October, the thigh was amputated near its middle, by the circular method. The limb was very vascular, nineteen arteries requiring

ligature. Union by the first intention was attempted, the sides of the stump being brought together with adhesive strips, and lightly covered with charpie and a bandage.

During the night hæmorrhage from the stump, judged to be to the amount of twenty or twenty-five ounces, occurred, and five additional ligatures were applied. Notwithstanding the debility occasioned by the hæmorrhage, and the irritation caused by a removal of the dressings and search after the bleeding vessels, he from this time went on improving. The discharge from the stump was at one time large, and some redness occurred over the end of the bone; but, at the present date, (Dec. 18th,) the stump is cicatrized, and presents a sound appearance, and the general health and appearance of the patient is good.

A very detailed account of the appearances which the tumour offered on dissection, was drawn up and presented, along with the specimen, to the Pathological Society, by my friend Dr. Stillé, and may be found at page 256 of the previous number of this Journal.

Remarks.—The case just detailed is on several accounts interesting. The strong pulsation of the tumour which was distinctly circumscribed, the ease with which it could be emptied by pressure and the quick return of pulsation in it upon the removal of the force exerted, together with its situation immediately between the heads of the tibia and fibula, the good general health of the patient and the history of its origin, all led to the belief that the disease was an aneurism arising either from the anterior tibial artery, or from its branch, the recurrent tibial. In this belief the femoral artery was taken up for its relief, and the entire cessation of pulsation in the tumor, the diminution in the swelling, and its greatly increased hardness after the operation, all induced us to think that we had produced by it a cure of the affection. Our only fear was that the long continued pressure of the aneurismal tumour had produced either absorption or caries of the soft ends of the bones, and that a too early use of the limb might eventually bring on disease of the knee joint.

The appearances presented by the limb, on his second admission into the hospital, made it evident that the disease was one of malignant character, and the dissection clearly proved it to be a tumour of the fungoid kind, arising from the medullary tissue of the tibia. The cause of the very distinct pulsation upon his first admission can, I think, only be explained by supposing an artery to have given way in consequence of ulceration, or rupture from a diseased state of its coats, which pouring out its blood into the soft matter forming the tumour, produced a state resembliug a circumscribed false aneurism.

That the ligature of the femoral artery exercised considerable influence in diminishing the rapid growth of the tumour, and in arresting its progress during some time, I am well persuaded, though had I been aware of the true nature of the disease I should not have thought it justifiable to have resorted to this measure.

A case precisely similar in all respects to the above, is related by Dupuytren, in the fourth volume of his *Leçons Orales*, in which he took up the femoral artery, and afterwards was obliged to resort to amputation of the thigh. Another case is given in the 120th No. of the *Edinburgh Med. and Surg. Journal*, in which the tumour occupied the head of the humerus. The disease was mistaken for aneurism, and the subclavian artery tied. Hæmorrhage supervened, and the patient died. A third case is reported by M. Lallemand, of Montpelier, which it is not in my power now to refer to, and these three are the only instances of similar disease arising from the bones, attended with a distinct pulsation, as if the tumour were aneurismal, with which my reading has furnished me, unless the cases recorded by Mr. Pott and M. Pelletan can be considered as of a similar nature. This I am inclined to believe, though the want of detail in the post mortem appearances prevents a positive conclusion on this point. Mr. Pott describes his case as "a dangerous disorder of the middle or upper part of the leg, produced, or attended with a bursten artery," for which he considers amputation as the only remedy, and describes the muscles as converted into "a strange morbid mass," and the bones as "more or less carious." M. Pelletan describes the disease under the name of "aneurism of Pott." In the first case mentioned by him (Pochard) the disease was seated on the inner face of the fore-arm, and after three unsuccessful operations for its cure, amputation was resorted to with success. In his second case the disease occupied the same situation as in the instance which I have related, and in it, after laying open the part, it was found necessary to amputate the limb.

Art. II.—*Observations on the Employment of Cimicifuga in the Treatment of Chorea.* By T. S. Kirkbride, M. D.

The Cimicifuga* is well known in many parts of this country under the common name of *Black Snake Root*, and although used for many years, in domestic practice, was first brought before the profession as a remedy of value in the treatment of chorea, by Dr. Young, of Chester County, Pennsylvania, in a paper published in the 9th volume of this Journal. To this paper, it may be recollected, was appended a note by the Editor, stating that the plant had been employed with success in the treatment of the same disease, by the late Professor Physick, many years before.

Chorea, fortunately, is a disease of such infrequency, that scarce any one practitioner is able, from his own experience, to decide positively upon the comparative value of different remedies; and it is to induce the profession to

* *Cimicifuga Racemosa*, Nuttall, Torrey. *Cim. Serpentaria*, Pursh. *Actæa racemosa*, Willdenow. *Macrotys racemosa*, Eaton's Manual. *Vide* United States Dispensatory by Wood & Bache.

make further trials with the article under notice, that the writer offers this short abstract of the cases that have come under his own observation, and from which, he is persuaded, the cimicifuga possesses powers of some importance.

The first two cases that came under our notice, after the publication of Dr. Young's paper, occurred during our residence in the Pennsylvania Hospital. One was a lad about ten years of age, and the other a girl of thirteen. In both patients the symptoms were well marked and of some standing. After coming under our care, the treatment consisted of free purging for a few days preparatory to the use of the powdered root of the cimicifuga, in the dose of a teaspoonful three times a day, and frictions over the surface of the body generally. No other remedy was employed, and the improvement which commenced almost with the use of the root, continued till the perfection of the cure, which was in about four weeks in both instances.

The next case we had an opportunity of treating, was in private practice, during the summer of 1835. The patient, a delicate girl, ten years of age, had decided symptoms of chorea, but of short duration. After free purging she took a wine glass full of a decoction of cimicifuga three times a day, and gradually increased the dose. This decoction was made by boiling one ounce of the root in a pint of water for twenty minutes. Her symptoms abated promptly and the cure was complete.

In only one of the cases just noted, were the functions of the mind much disordered, but in our fourth case, which follows, the mental affection was one of the most distressing symptoms. The patient was reported to be a highly intelligent girl, nine years old, but when she first came under our care in April 1836, the expression of her countenance was that of confirmed fatuity, and her actions and conversation, were such as might have been expected from her physiognomy. She walked with great difficulty, and appeared to have lost nearly all power over both her left extremities. She had irregularity of the bowels, head ache, and often complained of pain shooting down the left arm. In this case, the symptoms had been gradually coming on for six months before we were consulted, but owing to domestic misfortunes, her widowed mother was able to give her much less attention than she deserved.

Cups were applied to the back of the head and neck, once; stimulating pediluvia were prescribed, and frictions with salt over the surface of the body. After being moderately purged, every day for a week, she commenced with the cimicifuga in decoction, rapidly increasing the dose. An improvement was evident from the first few days' use of this last remedy; her motions became less violent; control over her left side was gradually regained; the functions of the mind improved with her other symptoms, and at the end of four weeks from our first visit, to the anstonishment of her friends, and we may add, to our own, she was entirely well.

Our fifth case came under treatment in February last, and was one of ex-

treme violence. The patient, a delicate girl twelve years of age, had been distinguished among her school-mates, for industry and intelligence; but after the commencement of the attack, she lost all interest in her studies and her mind appeared nearly idiotic; her countenance changed; her tongue was often seen protruding and saliva almost constantly flowing from her mouth. Her motions were sometimes so violent, that she was unable to keep her seat, and when rolling on the floor, not unfrequently bruised herself to a considerable extent. She was unable to take a drink or to feed herself. There was no cessation of her movements except during sleep.

The treatment consisted of cups to the head and spine, with free purging preparatory to the use of the cimicifuga in decoction, which she took for two weeks without the slightest benefit. At this period she had become so prostrated that she was directed to take cinchona, and Port wine; and carbonate of iron and ginger were afterwards prescribed. The skin over the spinal column was kept irritated with Croton Oil, and active frictions were used over the whole body twice a day. Under this treatment she eventually recovered, although not until the month of June, and even yet, we are inclined to believe that there is more mobility about her, particularly when excited, than previous to the attack. It is proper to state that the use of the cimicifuga was suspended, partly, from the difficulty with which the patient was induced to take it.

By permission of our friend Dr. Otto, we are allowed to refer to a very intractable case, which occurred in his own practice soon after the publication of Dr. Young's paper. A young lady of sixteen was reduced to an extreme state of prostration by the violence and constancy of her motions, which scarce allowed her to sleep at all during weeks; she had become completely idiotic, and a fatal termination was looked for. All the usual remedies had been employed, without advantage, when Dr. Otto directed the powdered Black Snake root, as something still untried, and to his surprise, an amendment took place, which resulted in a restoration to perfect health. The cure is attributed by her experienced and talented attendant entirely to the remedy last employed.

Another case, possessing much interest occurred in the Pennsylvania Hospital, in April 1836, under the care of Professor Wood, then attending Physician. This patient was a boy about seventeen years of age, from near Dyott's Glass Works, suffering with a violent attack of chorea, and who, Dr. Wood, informs us, was entirely cured by the remedy, particularly under notice.

From these seven cases, which have, with one exception, been under our own observation, we feel satisfied of the value of the cimicifuga, in the treatment of chorea, and disposed to attribute to it powers in some other affections in which we have not yet had an opportunity of giving it a satisfactory trial. After the details we have given, it is hardly necessary to say, that we do not look upon it as a specific in chorea. We have scarce ever

met with a case where the primary treatment was not plainly indicated by the disordered digestion, the loaded bowels, the pain or heat of the head and the languid circulation of the skin. But it is also right to state, that where these symptoms have been properly treated, the involuntary muscular movements, have often continued unchanged, until after the employment of the Black Snake Root. Purging we have always used before the cimicifuga, and general frictions with salt or the flesh-brush, and pustulation with Croton oil over the spine, we have believed to be of much value in the chronic cases. Of the two preparations we have employed, we are disposed to give the powdered root the preference, and now regret that we did not administer large doses in that form in our fifth case, where the decoction certainly had no effect.

Of the cases noted in this paper, it will be observed five were girls and two boys; and of the girls only one had attained an age where deranged menstruation was supposed likely to have had any agency in the production of the disease.

In what manner the cimicifuga produces its peculiar physiological effects we have not yet been able satisfactorily to determine. In the largest dose in which we have ever given it, it has produced no perceptible excitement of the pulse, no pain or heat in the head; and in only two of the cases, trifling nausea. The bowels have generally been moderately open during the use of the remedy, which has appeared mildly laxative, without ever inducing decided purgation.

Philadelphia, November, 1839.

Art. III.—*On the Nitro-muriatic Mixture as a Remedial agent.* By John P. Mettauer, M. D., of Virginia.

The compound which forms the subject of this communication, although early employed, and highly extolled, as a therapeutic agent, by distinguished European physicians, has been in a great degree disregarded in this country. The commendations bestowed upon it by Dr. Scott, in his essay, read before the Medical and Chirurgical Society of London, March 4th, 1817, as well as the very favourable opinions expressed of its value, by Doctor James Johnson, Mr. Annesley and others, certainly entitled this compound to be more generally resorted to, by the profession, as a remedial agent. Having frequently employed it, during the last fourteen years, and, with distinguished success, in a great variety of diseases, it has occurred to us that a transcript of our experience, in conjunction with a few of the most conspicuous cases in which it was used, presented in detail, might not be unacceptable to our brethren; and would tend to awaken, in some degree, a spirit of investigation.

Our attention was first directed to the nitro-muriatic mixture, as a remedial agent, by the perusal of Doctor Scott's essay, already referred to, and by attentively reflecting on the cases treated with it by him, as well as upon the chemical properties of the mixture, we determined to give it a trial in the first case which should occur propitious to its use. Accordingly in a short time the following case was committed to our care, in which we used it.

Mr. * * *, ætat. 29, of slender person, and strongly marked lymphatic developments, had been subject for fourteen years to asthmatic attacks from the slightest exposure: indeed the constant cough and free expectoration, with more emaciation than usually attends upon asthma in ordinary cases, had induced his friends, and early medical advisers, to regard the case as tubercular phthisis of a slowly wasting character. During the protracted ill health of this young man, anorexia, indigestion, constipation of the most obstinate kind, low spirits, &c., were constant attendants. The constipation was so obstinate, and constant as to resist the action of the most powerful and certain of the ordinary cathartic remedies in a very great degree; and its long continuance had so impaired, or vitiated the secretions, as to impart to some of them a peculiar fœtor, especially the exhalations from the pulmonary mucous surface, the urine, and perspiration. The gentleman's mind suffered much also, and occasionally became so erratic in its operations, as to expose him to the sarcasm and merry jeerings, not to say cruel ridicule of the thoughtless and unfeeling. In regard to his disease he seemed on some occasions irrational and almost a mono-maniac.

A critical examination into the case, disclosed, as a part of its early history, excessive indulgence in the soul-debasing practice of onanism, by the young man; and to the pernicious effects resulting to his delicate constitution from it, we ascribed some of the unpleasant and untoward symptoms now present. It could not be perceived during any of our visits to this gentleman, that he laboured under fever of marked character: and from his own testimony, and that of his friends, we were forced to the conclusion, that there was an absence of it, though we believe something like febricula must attend upon the case.

Before this case passed into our hands it had been treated by a variety of modes of practice, without affording the gentleman the least relief. Purgatives had been freely employed, but they failed to ameliorate the condition of the bowels, or any of the other symptoms of the case. Notwithstanding such had been the unfortunate result of purgative remedies, we determined to give them a trial ourselves, hoping by some combination, that we might be so fortunate as to meet the indication now present. We employed almost every variety of cathartic, again and again, combining them in various ways, repeating them after intervals more or less lengthened, but without being able to effect any salutary change in the condition of our patient. The cathartics, generally, acted so imperfectly, as very soon after com-

mencing with them, almost to induce us to lay them aside. They were, however, faithfully tried by the patient, who, as some of the means employed were new to him, felt to the last, much reluctance in giving up the purgative plan.

In this state of the case, after five weeks trial with internal cathartics, it occurred to us to make an experiment with the nitro-muriatic mixture. We formed the mixture of equal parts of nitric and muriatic acids and water: of this, from six to twelve drops properly diluted with sugared water, were administered through a small canula of reed, to prevent its action upon the teeth, three times during the day, varying the doses, so as to give the largest at noon, and at night. At the same time from thirty to fifty drops, diluted in two or three times as much simple water, were applied with a sponge over the regions of the liver and epigastrium, and to the insides of the arms, and thighs, having previously washed away from the skin, with soap and water, its unctuous secretion, to enable the acid mixture more readily to penetrate. In this manner the remedy was continued for three days, before any decided impression was formed upon the constitution by it. About the close of the third day, some improvement of appetite, and of the buccal secretions was manifested. But on the morning of the fourth, to the surprise and gratification of our patient, the bowels acted freely, and seemed as he expressed it "just to have waked up from their long sleep." On this day we visited the gentleman, and found him greatly relieved, in body, as well as in mind. For two or three days, the remedy, although partially discontinued, acted rather too freely upon the bowels: after this time, however, they became more tranquil, and gradually acquired a state of solubility, of the most comfortable nature. It was found necessary in consequence of the deficiency of the biliary secretion, as manifested by the appearance of the alvine discharges, to continue the use of the acid mixture, both internally and externally for some days, after it had unlocked the bowels. It was one of the remarkable effects of the remedy in this case, and very soon after the constitution had become only partially impressed by its action, to improve the appetite and to enliven the spirits. The gentleman was now cheerful and full of hope, and able to indulge in the use of almost any kind of food, of which he partook freely, and with a good relish and keen appetite. His recovery from this time was progressive and rapid. No other remedy was ever used by this patient after commencing with the acid mixture: nor was it necessary to use that during convalescence, except when the bowels seemed to become less free, and the appetite to falter, or to decay. At the date of this communication, now more than ten years since the case was treated, the gentleman continues to enjoy excellent health, and as bouyant spirits as any person of our acquaintance, of a constitution naturally feeble and delicate.

The next case which we shall particularly detail is an example of puerperal mania.

The lady, who was the subject of this afflictive case, was about eighteen years of age, of a good constitution, and rather disposed to be fleshy. She had never until after her confinement, which preceded the attack of insanity, and which was her first, discovered the slightest disposition to mental derangement, although such an infirmity was strongly hereditary in her family. Nothing occurred during the labour, or after parturition, which could have superinduced the maniacal condition. Four weeks elapsed before any indications of disturbed health were perceived, and when discovered were so slight as with difficulty to be recognised as decidedly morbific in their nature. The earliest appreciable symptom of a departure from the ordinary healthy state peculiar to lying-in women, was costiveness in a slight degree. This state soon deteriorated considerably, and with its augmentation the lochial discharge perceptibly diminished. The condition now presented did not long continue before the secretion of milk became sensibly lessened, attended with impairment of the secretions generally, and some slight fever towards evening, which last was very soon followed by symptoms of alienation of mind, first observed at night, five weeks after parturition. We did not visit this lady in the early stage of the attack, being absent from the county at that time; but we learned on first seeing her, that the symptoms of derangement very gradually but progressively increased in violence, until complete alienation of mind followed. Without attempting a particular detail of the case in this stage we will observe, that we have never witnessed a more aggravated case of mental derangement.

Previous to our visit efforts to purge had been made, but they were rendered ineffectual by the lady's incorrigible unwillingness to use remedies. When we first saw this patient, seven weeks after the birth of her child, we found her as already intimated, perfectly deranged, with the bowels obstinately costive, which state of them had continued for more than ten days; the lochia dried up; the secretion of milk, and the secretions generally, greatly deficient in quantity; perfect insomnia, and very slight general fever. For many days in succession very little food or even drink had been taken by her, either from a want of appetite and thirst, or from the apprehension that if she ate or drank, medicine might be disguised in the food or drink.

In treating this case our first object was to obviate the continued costiveness, and we attempted to effect this end through the agency of active internal cathartic means. We found so great difficulty in the administration of these, from the resistance of the lady, that we only succeeded after ten days trial, in introducing into the stomach one efficient cathartic dose; it being now manifestly impossible to introduce cathartics into the stomach, and it was equally impracticable to employ cathartic means by enema. In this state of the case we were compelled to draw upon our inventive resources; and while anxiously reflecting on the difficulties now so well calculated to embarrass and perplex us, the nitro-muriatic mixture presented itself to our mind as more likely to aid than any other means, now available

to us, to overcome the constipation of the bowels. The remedy was speedily prepared and extensively applied, by sponging every accessible region of the extended dermoid texture three and four times daily. In this case the mixture already advised for external use was employed for three days before it seemed to make any impression upon the internal organs. During the night of the third day, however, after commencing with the sponging, the bowels gave way, and a most profuse catharsis followed, attended with dark, tar-like evacuations, and exceedingly offensive. These evacuations were soon followed by others more natural in appearance; and now it was that the lady became more tranquil, and reposed in quiet and refreshing sleep the first time for many days and nights in succession. Her mind about this time, likewise, became more rational, especially after she had slept a few hours; and for the first time, for nearly four weeks, she inquired affectionately, and with parental tenderness, after her infant. The application of the acid mixture was in a measure suspended now; and, as the symptoms seemed to abate or to assume a healthy aspect, it was gradually laid aside. It was remarked that a single application of the remedy after the constitution was impressed by it, was sufficient to operate upon the bowels decidedly; and, that by varying the quantity used at each time, corresponding effects were produced upon the bowels. Under this simple treatment the lady soon recovered; and, at the date of this communication, now nearly seven years since the case was treated, and with the exception of a slight attack of melancholy, she has enjoyed excellent health, and is the mother of three fine healthy children.

We will report one other case in detail, confirmatory of the great value of the acid mixture in overcoming constipation, dependent upon biliary irregularity, especially that form of it connected with torpor of the liver. This was a case of stricture of the urethra, which in its early stage, had been badly treated with caustic. The gentleman down to the period of using the caustic—as he informed us when our advice was requested in the case—was healthy. The stricture followed gonorrhœa. When the case came under our notice, we found the patient's general health greatly impaired; the strictures augmented by the cicatrices, resulting from the bad management of the caustic; the digestive organs greatly disordered, attended with the most obstinate constipation; some fever at night, and very considerable emaciation and general debility. This gentleman had from the first, experienced much difficulty in regulating the condition of his bowels; and in the efforts to relieve the constipation, a great variety of remedies had been employed ineffectually. In treating the case for constipation, it had had been observed by the patient himself, that when even a cathartic acted freely, the stricture, although permanent in its nature, was less troublesome.

Our first object was to correct the torpor, and general disorder of the digestive system, before an effort for the correction of the stricture was deemed advisable. Accordingly, we commenced with the usual remedies

in such cases, using occasional doses of mercurials, and a great variety of purgative means, alternating and combining them in almost every possible manner, without, however, affording our patient any more than the slightest temporary relief. At length becoming discouraged, in making further trials with the ordinary internal remedies, we determined to use the nitro-muriatic mixture, and, as in the preceding case, our confidence in the remedy was much strengthened by our experience with it in the early trials which we had made, already reported.

We commenced with it, both as an external application, and an internal remedy, diluted and employed as already intimated. In three days the constitution was decidedly impressed by it, the bowels especially, which now acted freely. After its continuance one or two days longer, the quantity to be used was diminished very gradually, to what was actually required to maintain the regularity of the bowels. We now incised the strictures, three in number, and one fully an inch in extent, and extremely firm, and the corresponding portion of the urethra a mere capillary tube, and had the satisfaction, after using a large gum catheter as a dilating means, for five weeks, to find our patient perfectly restored to health, and his wonted cheerfulness. The mixture in this case was continued occasionally for some time, both during the cure of the stricture, and after its complete removal. Indeed it was found so agreeable a remedy, and so effectual in regulating the appetite and bowels, that the gentleman has never ceased to employ it occasionally for such purposes, when judged necessary by him.

This patient, now six years since the remedy was first employed with him, has continued entirely healthy, and free from his two torments, constipation and stricture, down to the date of this communication.

Besides the cases here reported, we have in numerous others of similar character, employed the nitro-muriatic mixture, with effects equally as marked as a curative agent. In dyspepsia, hepaticula, and other forms of chronic derangement of the liver, uterine affections of a sub-inflammatory nature, some of the forms of external scrofula, and nearly every variety of pseudo-syphilis, we have used this remedy with the happiest effects. In chronic uterine affections, especially the different forms of imperfect menstruation, connected with disturbance of the digestive function, and distinguished by mental depression, constipation, and anorexia, we have found it exceedingly beneficial. We have also employed the mixture with great advantage in certain forms of hepatic torpor and constipation, following catarrhal fever, with constitutions decidedly bilious. In some of these cases the curative effects of the remedy have most signally displayed themselves. This affection we have found quite common; and until we had recourse to the acid mixture in its treatment, it was an intractable and troublesome form of hepatic derangement.

From the prompt and decided action of this remedy upon the biliary secernents, when endermically applied in all the cases in which we have

used it, it presents itself as a valuable remedy in the treatment of that scourge, Asiatic cholera; and should we ever have an opportunity of treating a case of that appalling disease, it shall constitute one of our chief remedies. In this disease it may be used both as a certain and prompt promoter of the biliary, and general secretory operations; and as a powerful revellent, and counter-irritant, in aiding the centrifugal tendencies to the skin, two of the most important therapeutic designs in treating cholera, It may also be beneficially employed in cases of irritability of the stomach demanding cathartics.

In the first case which has been detailed, we believe no other remedy would have arrested the course of the disease so promptly and effectually as the acid mixture: and from the numerous and satisfactory trials of other remedies unsuccessfully used, we are forced to the conclusion that no other agent possessed the therapeutic properties adapting a remedy to the cure of such a disease as this case must have been.

The case of puerperal mania furnishes evidence equally satisfactory, in support of the therapeutic powers of the acid mixture, when employed as an epidermic remedy, as no other agent was used at the time, nor had been employed for more than ten days before it was resorted to. In this case we are disposed to believe, if the acid mixture had not been employed externally, that the disease would have terminated fatally, as it was next to impossibility to introduce efficient remedies in any other mode, and the patient was daily and rapidly declining, when it was commenced with, and must very soon have succumbed under the afflictive disease.

In the last case, particularly detailed, it will be conceded that this valuable remedy was equally efficient in arresting the tendency of the bowels to troublesome constipation, and in imparting to the digestive system a condition more favourable for a healthful exercise of its functions.

We believe the acid mixture is especially adapted to the treatment of morbid states of the human body, based in chronic inflammation, or engorgements of the capillary and parenchymatous structures of an indolent nature, either as the primary pathological condition of these structures, or the consequence of inflammation. In this view it is assimilated in its remedial action to mercury, to which agent we believe it bears a very striking resemblance in many of its therapeutic powers, especially those from which a deobstruent operation may be supposed to result. In the cases which have been detailed, as well as the diseases referred to, in which the remedy has been found decidedly beneficial, one or the other of these conditions must have obtained in the organs chiefly affected, or the pathological state from which the functional disturbances followed, constituting the external morbid phenomena of the disease present; the almost entire absence of constitutional fever, and the ordinary concomitants of a state of active phlogosis, in the diseases treated by us, as well as the cases reported in this communication, in which the acid mixture was chiefly beneficial, render it strongly pre-

sumable, that such was the character of their pathological basis in the structure at the time the remedy was employed.

In diseases of decided inflammatory character, the acid mixture is entirely inapplicable; and, as far as our experience enables us to decide, becomes so by reason of its tendency to irritate the constitution through those qualities which directly exalt the action of the economy unduly, so as to superinduce a state of hypersthenia. We have never found any but injurious effects to follow its action in every form of acute disease in which we have employed the remedy, and for a number of years have confined its use exclusively to chronic affections with very slight febrile disturbance of the general system.

Whether employed internally or externally, the remedial effects of the acid mixture are the same. Occasionally it acts with undue violence on the liver and bowels producing hypercatharsis, or even a condition may follow closely verging on dysentery, as it sometimes elicits sanguineous dejections, attended with tenesmus of most painful character. But, generally, its action is moderate and equable, and the remote textures, especially those forming the capillary and parenchymatous structures, as they constitute the glandular and other secerning organs, are chiefly obnoxious to its operation. Upon the glandular system, as well as the extended secerning mucous and serous surfaces, it acts with peculiar effect as a promoter of secretion and absorption. It is very certain that this mixture increases the salival flow; but its action as a sialagogue differs from that of mercury in not producing tumefaction of the gums, but only slight tenderness of them, beyond which it can seldom be increased. The breath is never contaminated by it, unless the acid is permitted to act on the teeth; and to prevent this accident, it should always be imbibed through a tube of some indestructible material introduced fairly into the fauces.

From the experiments of Dr. Scott, and others, as well as from our individual experiments with the nitro-muriatic mixture, and a solution of chlorine in water, we are disposed to refer the action of the compound in every case to the presence of chlorine, and believe, with Dr. Scott, that a solution of this elementary substance in water will answer as well as the nitro-muriatic mixture as a remedial agent.

We have never employed the remedy as a bath by immersion, chiefly on account of the difficulty of using it in this form in a country practice. In applying it as an epidermic remedy and by sponging, the mixture should not be used of painful strength, and from twenty to thirty minutes time will be long enough to continue the sponging at each application of the remedy, taking care that the surface shall be constantly kept moist, and covered to prevent the too sudden evaporation of the mixture from it. Should the parts become irritated, so far as to render the reapplication of the mixture to them painful, other situations must be selected. Unless employed as a counter-irritant purposely, the remedy should never irritate the skin in a painful degree; nor will it enhance the curative operation of the mixture, when

nployed as a constitutional remedy, to use it of a strength sufficient to esicate or pimple decidedly. The regions of the liver and stomach, the ine, and the inside of the arms, thighs and legs, are the parts of the body which we have generally applied the remedy. When to be used to the per and lower extremities at the same time, we have imitated the custom having it applied only to one extremity of the opposite sides; that is, to e right arm and the left leg; and, conversely, to the left arm and to the ght leg, unless the case be urgent, such as the puerperal mania already eported.

In every case the pulse should be carefully attended to before this remedy employed; and by no means should this important index of the state of ne general system be disregarded during its continuance, or a condition ssentially inflammatory may supervene upon its use, to contra-indicate a rther continuance of the mixture. We have never employed the remedy question with children, and incline to believe that it will not suit their elicate and irritable constitution, especially as an epidermic application.

In conclusion, we would earnestly invite the attention of our medical rethren to this neglected but valuable remedial agent; and we really believe, f they would more generally employ it, there would be less necessity for he use of mercurial preparations, against which, in every condition of ociety, an abiding prejudice obtains.

Prince Edward Court House, Va., October 26, 1839.

ART. IV.—*Cases of Lupus, (Dartre Rongeante of Alibert.)* By J. W. SCHMIDT, Jun., M. D., one of the Physicians to the New York Infirmary for Diseases of the Skin.

LUPUS makes its attack and ravages on every part of the body, but most commonly on the face, destroying the nose, eyelids and lips in its progress. It is attended with a hypertrophied and engorged condition of the tissues, and has the effect of puckering the skin to a remarkable degree, when the scabs have dropped off, and left a cicatrix, so that as it advances, the nostrils are often stopped up and drawn aside, and the lower lid stretched down, resembling in a measure, the effects of a very bad burn, and presenting the poor sufferer a frightful and disgusting object. It is mostly regarded as occurring in strumous constitutions, and in persons of that habit, who have suffered from syphilis and have a taint left of that disease; but occasionally it is met with of purely scrofulous origin, of which I have a lady at the present time under my care. It is placed by Alibert, Rayer and Gibert among the *order* Tuberculæ, but Cazenave has placed it with Biett, separately as not belonging to any of the recognized orders. It commences with

spots of a bluish red colour, generally livid, indolent tubercles with a grea tendency to destroy the surrounding parts and tissues, under the form o irritable, ichorous ulcers; these are covered with adherent brownish scales which on falling off show that the disease has continued its destructive course. The ichorous discharge is one of its peculiar characteristics. In order to give a better view of the treatment adopted I here annex a few cases.

Case I. *Dartre Vénérienne.*—H. L., a gentleman of high standing, consulted me on the 5th of August, 1836, for this disease which had resisted the best medical aid in our country, as well as the principal quack nostrums of the day, not omitting Swaim's Panacea, of which, to use his own expression, he had taken a hogshead, as well as swallowed a cart load of pills; being possessed of means he had also visited all the springs noted for the cure of such affections, viz: the Virginia, Avon, &c. This gentleman was about 40 years of age, of a sanguineous temperament and of general robust health. He had contracted syphilis in early life, and was supposed to be cured. However, the disease I have described made its appearance some years after his marriage; when I saw him its ravages had been going on for 10 years; the eyebrows were destroyed as well as a portion of the upper lids, and deep ulcerations existed on the forehead, cheek and nose.

I commenced the treatment by giving deut. iod. hyd. gr. $\frac{1}{4}$ with extr. cicutæ gr. i., night and morning, at the same time the sores were touched every night on going to bed, with proto. iod. hyd. 1 part, honey 12 parts, which is an application much used in the French hospitals in such cases, as well as to indolent ulcers. I also employed, as a topical application, the tinct. of iodine which I have also seen used, all of which was of little use in this case. I was induced to stop the deut. iod. hyd. and substitute the prot. in the same doses, as I found that the first irritated the bowels to a very great degree, and even with the last, I found it necessary to give occasionally at bed time a pill of opium. The external applications also, not agreeing, I requested my father, Dr. Schmidt, of Charleston. S. C., who was then on a visit to this city, to see the case with me. He proposed the use of a very weak alcoholic solution of mur. hyd. made in the following manner: ℞. hyd. mur, ʒi. alcohol ℥i., one drop of which add to an ounce of rain water, The parts to be frequently washed with it, and allowed to dry on. The pills of proto. iod. hyd. were continued until the 15th of January, 1837, with the increase of one dose mid-day, when the mouth became sore for the first time, although he had before taken mercury in different forms and in largequantities. The disease was now much arrested, and I deemed it advisable to stop the prot. and substitute the following solution: ℞. hyd. pot. ʒij; aq. destil. ℥iv; a teaspoonful in a wine glass of water, three times a day, which was continued until the 1st. of September, at which time there was no appearance of the disease, nor has there been any return since.

Case II. John O. Shaughnessey, ætat. 34, a native of Ireland, (the most hideous object I ever beheld,) consulted me at the Infirmary, December 3th, 1836; has been in this country five weeks; contracted in Manchester, Eng., a chancre on the dorsum penis near the root, and had also a bubo which did not suppurate; was treated by mercury, and his mouth made very sore. As soon as his mouth was touched an eruption made its appearance over his whole body; his throat also became affected, all of which occurred five weeks after the disease was contracted, at which time he left his first physician and went to another, under whose care he was five months and recovered to all appearance, with the exception of a sore leg. Does not know what course was pursued by his last medical attendant. He next went to London, where the sore leg became very troublesome, which induced him to enter the Middlesex Hospital, under Mr. Mayo, who put him again on the use of mercury, but does not know what preparation. His mouth was again touched. He was not disfigured when he entered the Middlesex; was under Mr. Mayo's care for four years and a half, of which time he was an indoor patient eighteen months. After having been in the hospital twelve months, a French physician saw him and advised Mr. M. to try a solution of hyd. pot. and iodine, which he did. The patieut became better under its use for a time and then got bad again. However, he continued it until April last, when he went to the Locke Hospital under Mr. Walker, who put him on the use of syr. sarsaparilla, for four weeks, during which time he improved much; the solution of hyd. pot. was next tried, under which he also continued to do well. The following is the form of the solution used: ℞. hyd. pot. ʒij; aq. destil. ℥viii; coch. mag. 4 in die. This man informed me that he could always check the disease with hyd. pot.; he was of irregular habits, and left the Infirmary in much the same condition in which he presented himself to me. This case is given to show the particular effect of the hyd. pot. which I consider a very important remedial agent, in the treatment of many cutaneous, as well as syphilitic diseases. It certainly possesses powerful alterative properties. I have no doubt but had this man's habits been good under the use of the proto. iod. hyd. and solution of hyd. pot. he would have been cured. Since seeing this last case, I have cured one very similar. I will also remark here that I have had under my care a number of cases of syphilitic sore throat of long standing which had been previously treated with mercury, without success, and they have invariably yielded to prot. iod. hyd. gr. $\frac{1}{4}$; extr. cicutæ. gr. i, night and morning, and increasing to three times daily. After using the above from 4 to 8 weeks, I follow it up with a solution of hyd. pot. I change, in the first place, the action of the parts by cauterizing the throat with the solid nit. argent. I have not found it necessary to carry the prot. so far as to touch the mouth, but if it accidentally occurs I stop the mercury, and go on with the hyd. pot. During the treatment, the patient should be freely purged once or twice a week, with infus. senna comp., and a light nutritious diet observed.

ART. V. *Cases of Hernia, with Remarks on the Use of Tobacco in that Lesion.* By SAMUEL JACKSON, M. D., of Philadelphia, late of Northumberland.

CASE I. In the year 1827, David Logan of Northumberland, who had long been afflicted with bubonocele on one side, for which he had constantly worn a truss by my directions, now suddenly produced one on the other side as he had produced the first, by straining at stool. It was very small and so painful to the touch as to preclude all thoughts of the taxis, without some relaxing preparation. He could not have been bled with propriety owing to his habitual intemperance and supposed propensity to delirium tremens; the tobacco injection was, therefore, immediately used and he was soon sunk thereby into a cold sweat attended with vomiting; but even now the taxis, though he bore it well, was unavailing.

After long continued efforts to reduce the tumour, he was directed to lie on his back, with his feet elevated on the wall, his hips raised by pillows, and to continue every moment of his time in this position till I might return.

Dr. J. B. Price of Sunbury was then sent for to assist, and in two hours from the time I had left him, we proceeded to the house prepared for the operation should it be necessary. He was still carefully lying as directed, though he had the pleasure of telling us with a joyful countenance that the bowel had receded. We now found no tumour, no tenderness on pressure, no sign of there having been a rupture. We gave him a number of purgative enemata and frequent doses of castor oil, in the course of that evening and night, but without any relief; the injections came away quickly without any accompaniment, and every thing was speedily thrown from his stomach.

The next day I explained to him the nature of his case and the necessity of an operation which might afford some chance of living; but as he was free from pain and as he thought from instant danger, he sued for time which was cheerfully granted under such difficult circumstances. He was desired to lie as much as possible with his feet and hips elevated as before, purgative enemata were frequently given and large tumblers were applied for a long time on the abdomen, as cupping glasses, with the vain hope of effecting something by the Russian method.

The third day the tobacco injection was again tried and persevered in almost *usque ad necem*, without success.

The fourth day, he was still free from fever and tenderness of the parts, was comfortable in the intervals of vomiting, and very desirous of trusting to nature. The operation he positively rejected unless I could conscientiously promise him relief and safety. To cut directly into the inguinal ring when there is no tumour to direct the operator, is a task not to be coveted unless by the most heroic and experienced surgeon; hence we gladly succumbed to our patient's determination.

It is not necessary to trace the history from day to day; suffice it to observe, that he went on puking at intervals until very soon the matter ejected was plainly stercoraceous, which he fully understood as well as the bystanders, and which he clearly expressed in his own language. He had no fever, no pain, no delirium tremens; he continued to look lively and natural to the 17th day, though he had several fits of vomiting every 24 hours.

He now told me, with hope in his countenance, that he had passed wind frequently the preceding night; then, for the first time, I encouraged him to to look for relief. He soon began to pass small portions of fæces, and to the best of my recollection, he was entirely relieved by the 25th day.

This man had no sign of fever from beginning to end, and though he had been for many years in the custom of taking largely of spirits, he escaped the delirium tremens—a fact that accords with our constant observations, that the propensity to this disease is immeasurably different in different persons, and not to be estimated by the quantity of their customary potations. He had two brothers, both habitual inebriates, who, though often deprived of their favourite beverage, never became deliri trementes.

It has been considered that a puking of the fæces, which has been called iliac passion, is universally a fatal symptom. I have never seen it in more than two cases, which were cured; one has just been related, the other was that of a woman whom we treated for inflammation of the bowels, about three weeks after delivery. She was recovered by almost excessive blistering around the abdomen and back, by frequent enemata of tobacco, and the warm bath almost continual. But these two cases may be considered as exceptions to the general rule.

Case II. In the winter of 1829, I was requested by Dr. Price of Sunbury, to consult with him in the case of Michael Hoffman, supposed to be labouring under strangulated hernia. The Dr. had tried the taxis freely, and we both tried it again, having prepared the system by the tobacco enemata. This having failed, we agreed to meet in the afternoon and to bring Dr. Rodrigue to assist at the operation, should it prove necessary.

We met at the appointed hour and agreed that the operation should be immediately performed. Upon making the usual incision, about six inches long, I was soon surprised with the appearance of a sac, smooth and tense, as though filled with water alone. Upon placing it between my eyes and the setting sun, which shone brilliantly upon us, I saw that the whole contents of the sac were uniform and semi-transparent. I said, *tacete, tacete—hydrocele est*, and immediately plunged the scalpel into the tumour and discharged the water by a large incision. I manipulated and conducted the affair in such a manner, that neither the bystanders nor the patient suspected any thing extraordinary. I drew the upper end of the wound together by two stitches and covered the whole with a poultice of bread and milk. He had an easy, rapid recovery and the hydrocele was radically cured.

The deception and erroneous diagnosis were not more extraordinary than the history of the case. The man had told Dr. Price precisely as he afterwards told us both, that the whole tumour had suddenly come on that morning upon his lifting a heavy log; and, further, that he had never known it before. Having heard its history from Dr. Price, I made no examination, taking it for hernia on the report of a skilful physician. The tumour was very large, and gave us the idea of a hernia containing much omentum.

Case III. In October, 1836, I was called by Dr. John Baskins of Selinsgrove, seven miles below Northumberland, to consult with himself and Dr. Reinhart in the case of Captain Coan, the postmaster of that town. The patient had long laboured under bubonocele of the left side and a propensity to it on the right side, where he had been operated on for strangulation twenty years before.

The previous day he had lifted a heavy stone and rested it on his abdomen, which instantly produced a bubonocele on each side attended with great pain. Dr. Baskins soon reduced both tumours, as he supposed, very fairly into the abdomen; but the patient insisted that they were still strangulated. Enemata and purgatives were tried but no passage was obtained.

When I arrived there was certainly no other evidence of strangulation than the patient's own feelings, with some tenderness on pressure, costiveness, and vomiting. If a stricture existed, it was, of course, at the internal ring or in the neck of the sac; but on which side or whether on both sides, could not be determined. The case was full of perplexity; and, as the patient had no sign of fever, it was determined to try the tobacco enemata and even other means, rather than incur the responsibility of cutting where probably no stricture existed, and where, moreover, there was no tumour to direct the operator.

Drs. Baskins and Reinhart attended to him till the next day, when my assistance was again requested. Dr. B. now cut into the inguinal sheath or canal of the right side, in the manner directed by Sir Astley Cooper, and each of us introduced a finger through the internal ring into the abdomen, by which we satisfied ourselves that no stricture existed. By this time the patient was heartily tired of our multiplied endeavours to relieve him, and he resolved to die rather than be opened on the other side.

No passage was obtained, he vomited frequently and died on the following day. I was prevented from attending the necrotomy, but his two physicians reported that there was no stricture at either ring; that a very small portion of intestine was found strangulated by Gimbernat's ligament, forming a femoral hernia, which was completely mortified.

Here there was an extraordinary instance of hernia wherein three strangulated ruptures were simultaneously produced, by one highly imprudent act, and by a man too who had long known the dangerous tendency of pressure on the abdomen. That the tumour from the femoral hernia must have been

almost imperceptible is certain, or we should have discovered it in our multiplied manipulations in that vicinity.

Here it may not be amiss to observe that I have never seen a femoral hernia.

On the Pre-eminence of Tobacco in Strangulated Hernia.—The use of tobacco in hernia, and of tobacco or tartar emetic in dislocations, I have long preferred to those copious effusions of blood formerly, and perhaps still, too much in use. To lose blood sufficient to induce fainting, and to preserve the system in this state till a bone or a hernia may be reduced, is an expenditure of the vital fluid, a waste of strength, which very many who are not prone to faint, will not regain for months or years. This is particularly the case in old people, but it also applies to the young who are already in a state of debility or of chronic disease, and to those who from idiosyncrasy are slow to recuperate.

Ice I have repeatedly tried, but never with the advantage of contracting the tumour; nay, it sometimes appeared to increase it both in size and tenderness.

The Russian method by cups demanded a trial; hence we have covered the abdomen with half pint exhausted tumblers, but they proved as useless in practice, as in theory they were unpromising.

The warm bath and warm fomentations may be tried, but they will hardly succeed in bad cases without the aid of simultaneous bloodletting. It is true that if the patient is greatly relaxed by the general warm bath and blood be let while he is yet in the water, a very small loss may suffice; but this may be in most situations a troublesome remedy occasioning too much delay. Time, said Franklin, is money; but in the treatment of hernia, time is not only money to the physician, but life to the patient, as well as honour to the profession of medicine. Tobacco will do all that bleeding can do, however great the inflammation, all that ice, or cups, or belladonna, or any other means can do, that have ever been invented.

We have never used cataplasms of tobacco to the tumour and stomach, but we intend to give them a trial the very first opportunity. We have very frequently used them with great advantage, for spasms of the bowels, particularly those of saturnine colic, and we do not see why they should not prove sufficiently powerful in hernia, at least, in those persons, who have not become hebetated by the continual use of this article. In persons who are very sensible to the impressions of tobacco, a cataplasm to the stomach will soon induce emesis and general relaxation.

Deglutition of tobacco smoke we have used with decided advantage. A few years ago, I was called to a patient in the night, who had been suddenly taken with strangulation of an old hernia: the taxis was gently tried but the tumour was too sensible to bear much manipulation. There was no syringe nor means of administering an enema, nor was there any fire in

the house, by which a tobacco cataplasm could be quickly made; hence it instantly came into mind that he might swallow tobacco smoke as a substitute. He was furnished with a cigar and desired to make vehement efforts to pass the smoke into his stomach. He soon became sick and puked, his whole frame relaxed, and covered with a cold sweat. The bowel was now very easily reduced and the free use of volatile spirits both internally and externally, soon restored him.

Whether this method of using tobacco has generally any advantage over the enema, I am not prepared to say. With women, and with those men too, who are delicate with respect to these obscene operations, it may be preferred, for delicacy ought always to be carefully regarded. I have very frequently used it since for spasms in the bowels, and for hernia; but it has several times entirely failed, owing, as I supposed, to the patient's inability to pass a sufficient quantity into the stomach. Those, moreover, who are unfortunately, or, let us say, viciously accustomed to the use of this poison, are not to be overcome by a small quantity. That smoke can be passed into the stomach by deglutition, I am very certain from my own personal experiments.

Strangulated hernia was of frequent occurrence in my busy and extensive practice, but of all the numerous cases that occurred to me during twenty-five years in Northumberland and its vicinity, every case was successfully reduced. I have performed the operation in three cases only, and these were in the practice of other physicians; one was successful and two were lost by previous sphacelation and a subsequent artificial anus. This success with the taxis, I impute entirely to the prompt and powerful aid of tobacco. If it be objected, that it is a dangerous remedy and that a few patients have been destroyed by it, we reply, that either the disease or the operation is far more to be dreaded than the use of tobacco in careful hands. The scientific physician will consider the strength and idiosyncrasies of his patient, and use the medicine with prudence. When I contrast this with the ignorant temerity with which the nurses and busybodies have often used this article to my knowledge, without measure and yet without detriment, I am fully persuaded that in the hands of skilful, scientific physicians, it ought not to be considered as a dangerous remedy.

ART. VI. *Case of Serious Injury of the Knee Joint, Terminating in the almost Perfect Recovery of the Use of the Limb.* By DARWIN E. STANTON, M. D.

THOMAS COFFEE, ætat. 18, on the 18th day of May last, whilst engaged in pointing rails with an axe, in consequence of the axe glancing from the

rail, received a severe cut on the outside of the right knee joint. The incision was horizontal inclining inwards and downward, from within a quarter of an inch of the patella, two inches posteriorly, and was of a somewhat conical shape; that is, the opening in the sac was not quite so large as the incision through the skin, in consequence of being made by the heel of the axe, which would necessarily give it the above mentioned shape.

The direction and force of the axe was such, that in passing inwards, it chipped off a portion of the external surface of the femoral condyle, together with a portion of its articulating surface. The edge of the instrument then sank through the external semilunar cartilage, into the head of the tibia, slightly splintering the head of that bone, a little anterior to the head of the fibula. The wound bled freely at first, but the hemorrhage soon ceased. The limb was lying in an extended position, but whilst I was engaged in dressing the wound, the patient, by some inadvertence, caused it to slip from its support and become suddenly flexed. At this moment, the joint admitted a large quantity of air, which entered with a loud gurgling sound. This I considered as imminently increasing the danger of the patient. I immediately placed the limb in an extended position, and by compression with my fingers forced a considerable portion of the air, together with some coagulum from the cavity, and by placing the wound in a depending position and passing my finger into the cavity of the joint, I succeeded in breaking up and removing large portions of coagulum which yet remained.

After this was effected and the cavity perfectly freed from all extraneous substances, such as bits of bone, &c., a flexible catheter attached to a syringe was inserted, by the suction power of which the remaining air was removed; the catheter was then very carefully abstracted and the wound firmly closed by adhesive straps.

The whole limb to the pelvis was then enveloped in a roller, the knee being padded beneath the roller with cotton batting that the pressure might be distributed around the joint evenly. The patient was then placed in bed and the wounded limb secured to an inclined plane, so that the foot was considerably elevated, in which position he rested comfortably.

19*th.* Comfortable with the exception of slight headache and a little soreness in wound. Upon removing the roller and examining the knee, no swelling had taken place. Diet 4 oz. boiled milk and two ounces bread, twice a day. To be purged with salts.

20*th.* Some headache; tongue white; some pain in the knee. Complained of tightness of the roller about the knee and of soreness of the wound. Upon removing the roller, the joint was observed to be considerably swollen, with tenderness at a point opposite to the wound over the internal condyle. ℞. scarified cups, no. ij, over internal condyle. The knee to be kept cool by the repeated application of cold water, and in the evening a large blister, so as to completely envelope the joint, over this the roller. Diet same. To be purged with salts.

21*st*. Blister had drawn well and discharged freely; swelling increased; knee quite painful; headache; tongue white. Diet, rice soup. To be purged freely with salts.

On the 25th the blister was again applied, and from this time the patient continued to do well. To the 3d day of June the patient remained in bed with the limb elevated. On this day he walked about the room, and from that time continued to perform gentle motions of the joint every day, until the nearly perfect use of it was restored to him. After the 25th of May the only treatment was purging daily with salts, and the constant application of the roller, the joint as before mentioned being padded with cotton.

The wound did well, with the exception of a few prolific granulations which were easily subdued with burnt alum.

The only difficulty he now experiences in the use of the limb, is when he ascends a staircase quickly, and when, as he expresses it, "he squats down on his hunkers." In ordinary walking and running, he has the perfect use of the limb.

The peculiarity of this case, is the happy termination of it after so serious an injury. When we consider that even the most trivial injuries of this joint are apt to terminate unpleasantly, and sometimes fatally, and how timid the most skilful surgeons are about the most trifling operations upon this joint, this case is rendered the more remarkable.

The fact that the knee joint should be laid completely open—a portion of the articulating surface removed—the semilunar cartilage divided and the whole synovial surface exposed to the action of the atmospheric air—the event being a restoration of the use of the limb, forms altogether one of those interesting and pleasant cases with which it is sometimes the lot of the surgeon to meet.

Holliday's Cove, Brooke Co. Va., December 6, 1839.

Note by the Editor.

[Our correspondent has very justly considered the preceding case as invested with much interest from the circumstance of the use of the limb having been restored after so severe an injury to a joint. The apprehensions which he entertained, however, of imminently increased danger to the patient from the entrance of air into the wound, though sustained by the opinions of most surgeons, we think wholly unfounded. It was taught by Monro, that air, is an active irritant to the synovial membranes; and this doctrine has since been pretty generally received, without, it appears to us, a sufficient examination, and in opposition to some well-determined facts. No positive experiments, so far as we know, can, it is true, be cited in contradiction; but clinical observations certainly afford no evidence in its support. Very severe symptoms undoubtedly, often arise from exposure of a joint to the air; but may not these with more propriety be referred to the circumstances which attend the injury, the nature of the wound, improper treat-

ment, &c., than to any irritating properties of the air? In favour of this view many examples might be adduced. Dr. Bond relates a case in which "the patella was cut across transversely by a blow of an axe, and divided into two nearly equal portions, so that the joint was laid open," and Dr. B. "had a direct view into it. The patient was a healthy boy, aged eight years, and the fragments of the bone united without any apparent affection of the synovial membrane." (*Philadelphia Journ. Med. & Phys. Sci.* Vol. II. p. 273.) Other instances in which joints have been freely opened without any bad symptoms accruing might be cited; whilst on the contrary the most violent effects have often resulted from injuries of joints in which the wound was too small to admit the passage of air. It thus appears that the possession, by this fluid of any property by which it is enabled to excite irritation in synovial membranes, remains as yet to be proved; though it is not to be denied, that a current of air may prove injurious to these membranes by its temperature, when this last is different from that of the tissue; or by absorbing the moisture of the parts, and thus placing them in an unnatural condition. But we have discussed the subject of the action of air on the different tissues so fully elsewhere, (see *American Cyclopedia of Practical Medicine and Surgery*, vol. I. p. 263—270,) that we need not enter into further details here.

ART. VII.—*Remarks on the Climate, Population, Diseases, &c., of Malta, with an account of the Asiatic Cholera as it occurred in that Island and Gozo, in the summer of* 1837. By PLINY EARLE, M. D., of Philadelphia.

THE island of Malta, the ancient Melita, situated between the southern extremity of Italy and the African coast, is in latitude 35° 50′ north, and in longitnde 14° 15′ east. Its length is twenty miles, its greatest breadth twelve miles, and its surface, on the supposition that it were a perfect ellipse, 188 square miles. Its soil lies upon a continuous bed of limestone, which is soft in texture, light in colour, and far from being durable as a material for building, soon crumbling when exposed to the elements. The southern coast, throughout nearly its whole extent, is inaccessible, the rocks rising, in nearly perpendicular cliffs, to a height, in some places, of 300 feet. The soil, though neither rich nor deep, is in a state of the highest cultivation, and, under the auspices of a mild climate, furnishes to the cultivator two crops in the year. The number of species of native plants, according to Dr. Zerafa, is 644; but it is thought that, were a perfect list made, it would amount to 700. Many of the species are papilionaceous; but few of them belong to the labiatæ.

The facts, that the latitude of the island is somewhat low, approximating the tropic, that it is surrounded by so extensive a body of water, that its situation is not very remote from the African coast, whereby it is subject to the hot winds blowing from the Lybian and the Saharian desert, would lead, *a priori*, to the conclusion that its climate must be mild. It is so. In January the mercury ranges from 50° to 55° Fahrenheit; in February the average is 60°; in the summer months its range is from 80° to 88°, and in October the average is 70°. The wind, when it sets from the north and northwest, is always fresh; but from the south it is almost invariably hot. Rain is rare in summer, but the heat is tempered by dews and the northerly winds. Among the peasantry it is customary to sleep in the open air, uncovered, during the night. This practice is indulged in without deleterious consequences. During the prevalence of a southerly wind, in summer, the atmosphere becomes hazy and dry. The aridity is so great, that furniture and book-covers are said to crack from its desiccating effects. The scirocco generally prevails, to the greatest extent, in September. Phthisical persons are said to suffer considerably during this period. Hence, it has been supposed that Malta is not a suitable place for those who are threatened with consumption, or who are already suffering from its invasion. From observation, during a personal residence in the island, in the months of January and February, 1839, I should have arrived at an opposite conclusion in reference to the winter months. I knew some individuals who had resorted thither for the benefit of their health and were very much improved. I would select it as a place of resort for tuberculous patients, during the winter, in preference to any of the cities of Italy.

"Strangers in general are affected, during the prevalence of the scirocco, with great lassitude and debility, which indispose the system and render it liable to suffer from dyspepsia. The natives, however, seldom complain of its bad effects on their constitutions, but more of the inconveniences which it brings to workmen and mechanics. Paint applied when this wind blows will never set well; glue loses much of its adhesive property, bright metals become tarnished, and, from the dampness of the atmosphere, the pavement of the streets is sometimes quite wet. Though this wind has occasionally held out for a week together, it seldom lasts more than three days successively."

The warmth of climate and the double crops, annually, enable this rocky island to support a vast population. The number of inhabitants is about 100,000, or nearly 600 to the square mile. Including Gozo, a very small island in the immediate vicinity, it is said that the population equals 638 to the square mile. This is eight times as great as that of England, and more than twenty times as great as that of Massachusetts, the most densely populated state in the American Union.

There appears to be no endemic disease in Malta. Ophthalmia is very prevalent, and is undoubtedly to be attributed, in a great measure, to

the reflection of the rays of a summer sun from the surfaces of the light-coloured rocks, so abundant in every part of the island. Even in winter, the light in the streets of Valetta is, at noonday, almost insupportable to one who is not accustomed to it.

I have seen, in the hospitals, cases of *tinea capitis* successfully treated with a mixture of carbon and sulphur, locally applied. There are also cases of intermittent fever, but they are, invariably, in persons who have recently arrived, and generally among those coming from the north of Africa. Otherwise the disease is unknown in the island.

There are four hospitals in Malta, one naval, one military, and two civil. One of the last is in Valetta, and the other in Citta Vecchia or Notabilé, near the centre of the island. There is a civil hospital, also, in Gozo. At Floriana, adjoining Valetta, there is an asylum for the insane, and the town last mentioned is furnished with a public dispensary. The civil hospital in Valetta is as well furnished and as neatly kept as most of the institutions of the kind in England and France.

A University was established in the island, by the Jesuits, in the year 1592. It has included a medical department, I believe, ever since its commencement. The Medical Faculty is composed of five Professors. The chairs are, 1st. Anatomy and Surgery; 2d, Physiology and Pathology, including Theory and Practice; 3d. Botany, Medical Jurisprudence, and Natural History; 4th, Obstetrics, and 5th, Chemistry and Materia Medica.

At the commencement of the year 1839, the organisation and discipline of the University were remodelled, and some changes were made in the Medical School. The medical students receive constant instruction in the hospitals.

A journal, called *L'apé Melitensê*, and devoted to the Medical Sciences, has recently been commenced at Valetta. It is a magazine of about 100 pages and is edited by Dr. Schinas. Only two numbers had been published previously to March, 1839. I am indebted to an article* in this journal, to an essay† upon the same subject, published, in a pamphlet form, by Dr. Chetcuti, and to data received from physicians, with whom I became acquainted in Malta, for the principal facts in the following account of the Asiatic Cholera as it prevailed in that island and in Gozo, during the summer of 1837.

The winter of 1836–7 was mild, in Malta, but was succeeded by a cold and humid spring. The Grippe, which had been prevalent, had not entirely disappeared, and cases of bronchitis were not unfrequent. A tendency to encephalic, pneumonic and gastro-enteric phlogosis, also

* Relazione del morbo Cholèra, regnato epidemicamente in Malta nell' anno 1837, ed osservazione teorico-pratiche sulla medesima malattia.

† Notizie storiche e patologico-cliniche sul Cholèra che divampò in Malta e Gozo, nell' esta' del 1837. Di Tommaso Chetcuti, M. D.

remained, exhibiting itself by dyspnœa, anorexia, diarrhœa, gastralgia, vomiting, cephalalgia and vertigo. This, however, diminished as the warm weather advanced, but, to a certain extent, continued during nearly the whole period of the prevalence of the cholera. About the 1st of June, there were two cases, the symptoms of which were those of the Cholera asphyxia. They were fatal, but did not excite the suspicions of the medical men in whose practice they occurred. On the 8th of the same month, the mercury standing at 74° Fahrenheit, and a hot wind blowing from the south, two cases occurred in the Ospizio degli Invalidi, at Floriana, which proved to be the real Cholera. The patients were both men, one 75 and the other 94 years of age. There were two additional cases in the same building on the 10th, one of them terminating fatally in fifteen, and the other in eighteen, hours.

The disease progressed until, at midday, on the 13th, twenty-seven of the inmates had been attacked and seventeen had already died. The number of persons in this establishment was 750. In order to place them beyond the influence of the local contagion, and to furnish them with more ample accommodations, in the event of the disease continuing its attacks, about 630 of them were removed to Fort Ricasoli. The epidemic extended among the 120 that remained, so that on the 26th there had been sixty-one cases, of which fifty-seven had terminated fatally. Meanwhile, those who had been removed to Fort Ricasoli, were not exempted from the disease. On the 13th two of them were attacked and both died in a few hours. On the 14th there were seven new cases, all of which proved fatal on the same day; and on the 15th there were thirty attacks, thirteen of which terminated fatally before night. It thus progressed until, on the 19th, there were sixty new cases in the fort alone. From that time it decreased, and became extinct on the 7th of July, after having carried off 385 patients out of the 476 who had been attacked. Hence, among the 750 inmates of the Ospizio degli Invalidi, there were 537 attacks, of which 442 were fatal, and ninety-five were cured. Of those who died, there were among the paupers 172 men and 177 women; the insane, thirty-one men and twenty-three women; prisoners, eight; boy, one. The remaining thirty were galley slaves, nurses, &c., &c.

Meanwhile, the epidemic pursued its devastating course in other places, cases having broken out sporadically, in several situations. As early as the 19th of June, there were many cases in the vicinity of Floriana. The total number, up to this time, ten days after the commencement of the disease, was 298, and that of deaths, 200. On the 20th the disease broke out in Valetta, Senglea, and three other places; and previously to the 27th it was in the towns of Cospicua and Vittoriosa, as well as in two other places. Before the 4th of July it had appeared in six other localities; between the 6th and 11th in ten more, including the island of Gozo, where it appeared on the 6th; from the 12th to the 18th in three more; and from the 19th to the 25th in one more. It had now visited all parts of the two islands.

Those who could change their places of residence had, by this time, fled from the great centres of population and taken refuge in the more retired aud salubrious sections of the island. The epidemic continued through August and September, and was not completely exterminated until the 9th of October. Thus, it will be perceived that the disease prevailed about four months in Malta and three in Gozo. On the 4th, 5th, 6th and 7th of July, the number of new cases was successively 141, 168, 202 and

214. The greatest number attacked in the two islands, on any day, was 346. This was on the 14th of July. The maximum of the number of daily deaths was 137, on the 17th of the same month. The disappearance of the epidemic was simultaneous in the two islands.

The number of cases in Malta was 8022, of which 3869, equal to 48.22 per cent. terminated in death. In Gozo there were 812 attacks and 374 deaths, equal to 46.6 per cent.

In the practice of Dr. Chetcuti, the fatality was greater during the early part of the summer than it was subsequently.

There were nine cholera hospitals established in Malta, and one in Gozo. Patients were also received at the two civil hospitals at Valetta and Floriana, in the former island; and the soldiers of the line and the marines were treated, the former at the military and the latter at the naval hospital. The result of the treatment in these several hospitals is contained in the following table:

Epoch.	Hospital.	Cases.	Deaths.	Per cent.
During whole period,	Civil	94	62	66.
From 20th June to 2d August,	Cholera, Valetta	526	299	56.9
28th " 18th "	Senglea	305	205	67.2
8th July 10th "	Zeitung	149	97	65.1
8th " 29th "	Casal Lia	143	95	66.4
9th " 2d September	Notabilé	147	95	64.6*
10th " 1st "	Zebbug	181	109	60.2
18th " 18th August	Zurrico	87	50	57.5
20th " 10th "	Birchircara	58	26	44.8
20th " 11th "	Curmi	85	46	54.1
26th " 2d September	Floriana	84	50	59.5
During whole period,	Military	304	71	23.4
Do. do.	Naval	70	19	27.1

The small proportion of deaths in the military and the naval hospital, is attributed to the superior accommodations for the patients, and the greater attention which was devoted to them in those institutions. The mortality in the other hospitals was much increased, in that a large number of the patients were *in articulo mortis* when brought in, and died immediately. It is asserted that of those who had an opportunity of proper treatment, the proportion of deaths was smaller than in the cases occurring in private practice. Of 89 patients treated in the suburbs of Notabilé and in the Saura hospital, 30 were treated during the prodrome or existence of the premonitory symptoms. Three only of these died. Eighty-two were in the first stage, and 38, or 46 per cent., of these died. In the stage of collapse there were 48, of whom 30 died, equal to 63 per cent.

In seven of the hospitals above mentioned, the number of the patients of each sex was preserved distinct. The result was as follows:

* Of those in the hospital at Citta Notabilé, 100 were in the first stage and 78 in the second, or that of collapse, when they were brought in; four died before they could be put to bed, and thirty within two hours after the moment of their admission. Of those who were in the first stage about fifty per cent. died, and of those in the second stage more than ninety per cent.

	Total.	Men.	Per cent.	Women.	Per cent.
Cases,	1399	664	47.46	735	52.54
Deaths,	821	360	54.21	461	62.72

Dr. Chetcuti remarks that three-fourths of the patients in the hospitals of which he had the medical superintendence, and three-fifths of those in his private practice, were women. Hence, so far as data affecting the question are obtained, it appears that the number of women considerably predominated over that of men. The proportion of deaths was also greater among the women.

No age, sex, constitution or condition was exempt from the invasion of the disease, though the proportion of children absolutely affected was less than that of adults. "Small children had it very lightly, few of them being confined by it;" and "in the robust of either sex it assumed a type of greater severity." The proportion of deaths was greatest among people advanced in life.

The tenants of low and badly ventilated habitations were more subject than others to the epidemic influence, but persons who were predisposed to the disease, were not exempted from it by a residence in high and favorable situations. In some of the hospitals in the most salubrious localities, the mortality was as great as in any of the others. And, indeed, it was found that, in proportion to the population, the ravages were about equal in all parts of the two islands.

During the prevalence of the epidemic more than half the population were, to a greater or less extent, affected with its symptoms, such as borborigmi, abdominal pains, irregularity of evacuations and cramp of the inferior limbs. But, in a vast majority, these symptoms passed off or resolved by a crisis "induced by an irritated state of the nervous system," such as diarrhœa, sweats, vomiting and expulsion of fetid gas; or were removed by medical means, such as venesection and the use of diaphoretics or cathartics. The meteorological state of the atmosphere, particularly sudden changes and great electrical movements, had a great and controlling influence upon the number and the severity of attacks. Abstemious diet and regular habits generally prevented the invasion of the disease, or greatly mitigated its severity.

Many cases terminated fatally in from seven to ten hours. Some of the patients died during the stage of irritation, and others during that of re-action. The principal forms of the disease were diarrhœa and asphyxia. No disease other than diarrhœa prevailed during the reign of the epidemic, and that very easily passed into cholera. Sanguinolent evacuations, a cold tongue, and an extremely feeble pulse were the most fatal symptoms.

Among the patients in the cholera hospital of the Citta Notabilé and in its vicinity, there were eight women considerably advanced in pregnancy; six of them died and two recovered. The Cæsarian section was practised upon one of those who died, and the other five aborted during the course of the disease. Three of their infants were alive. The two women who recovered were delivered each of a still-born infant, at the full period of gestation.

None of the washerwomen of the cholera hospital of the Citta Notabilé were attacked with the disease. Some of the men nurses suffered from the premonitory symptoms, but were relieved by timely and appropriate

medication. Two of the female nurses died; they were predisposed to the disease by fear and irregularity of diet. It was observed at Malta, as at Paris, Naples, Warsaw and other places, that recently married people were, to a greater extent than others, subject to the epidemic influence.

The predisposing causes which were principally operative were, 1st, Errors in diet; 2d, Cool temperature, particularly if accompanied by humidity of atmosphere; and, 3d, The influence of the depressing passions, as grief, fear, &c. Most of the attacks occurred at an early hour in the morning, a fact which, perhaps, is partially to be accounted for by the action of cold and humid air. Grief for the loss of friends was, in many instances, considered to be the cause of the invasion of the malady. The fear of the disease was likewise a powerfully predisposing cause. Dr. Chetcuti remarks, that if any who gave way to such fears escaped an attack, it is attributable to the cessation of the epidemic.

The treatment generally pursued by the physicians during the prodrome or presence of the premonitory symptoms, was severe diet, sudorifics, and, in case of diarrhœa, cathartics of oil. According to the physician last mentioned, when the cholerific miasma entered by the lungs, it acted directly upon those organs and nearly always produced cerebral or cardiac symptoms. In this event, diaphoretic drinks and venesection, promptly resorted to, proved very effectual. Venesection was extensively and effectively practised by Dr. Chetcuti. The cold bath was attended with benefit in some cases, but was injurious in others.

After the actual invasion of the disease and during its first stage, or that of "irritation," the refrigerant and anti-irritant treatment was attended with the greatest success. The oxide of bismuth, calomel, and the sulphate and the acetate of morphia were employed for the purpose of stopping the vomiting and dejections. They were attended with but little success. Dr. Chetcuti used iced water and small pieces of ice, which were held in the mouth and swallowed as they melted. Much utility was found in the application of leeches to the præcordia or the anus, following the application by a dose of the tincture of opium or a portion of iced water, or, as an injection, a decoction of chamomile. In many cases brandy and iced water, both as drink and by way of injection, acted admirably, frequently stopping the diarrhœa. Vesicatories throughout the length of the spine were also useful.

During the second stage, or that of collapse, no remedies were administered internally, excepting iced water or small pieces of ice. Stimulating frictions and revulsives were applied externally. In those cases in which collapse was induced by the immediate operation of the specific miasma, rather than by a thickening and dissolution of the blood by evacuations, general bleeding, followed by sudorifics and the cold bath, was very beneficial. As soon as re-action took place, general and topical bleeding, mild sudorifics, saline purgatives and external revulsives were put in requisition.

Calomel was directed by some physicians during the stage of collapse. Dr. Chetcuti administered it in but two casses; in both of these typhomania was produced, which terminated fatally. Dr. Falzon, of the hospital of Zeitung, observes that, in the few cases in which he employed it in this stage, typhomania of the most severe form occurred. Dr. Chetcuti says, "Many typhomaniac patients were treated by me, and although I proportioned the antiphlogistic and revulsive means to the intensity of the specific phlogosis, I was unable to save but two cases in 28 or 30.

The following table, exhibiting a comparative view of the statistics of the cholera in Rome, Naples and Malta, is given by Dr. Schinas.

City.	Population.	Cases.	Ratio.	Deaths.	Per cent.
Rome,	150,000	9,372	1-16	5,419	57.8
Naples,	350,000	21,798	1-16	13,798	63.7
Malta and Gozo,	120,000	8,833	1-13	4,243	48.03

Such, then, is a brief account of the ravages in Malta and Gozo, of that giant disease which, during the last quarter of a century, has traversed, with a step of desolation, so large a portion of the habitable globe. After passing over a vast extent of territory upon the eastern continent, it leaped the broad Atlantic, bringing its breath of pestilence upon the shores of America. As if unsated by the extent of destruction here, it returned once more to Europe, and in Naples and Malta, as it had previously done in other places, nearly decimated the population. Although, at the present moment, it is apparently exterminate, the history of its course and characters is useful, not only as perpetuating a knowledge of one of the most remarkable epidemics with which the earth was ever visited, but also as an assistance to the physicians of future years, should it again appear and extend its ravages among mankind.

ART. IX. *Remarks on Tenotomy, with cases of Club-feet, and a case of Section of the Hamstring Tendons, for Contracted Knee-joint.* By Dr. BURLEIGH SMART, of Kennebunk, Maine.

AMONG the numerous improvements in modern operative surgery, there is probably none which presents stronger claims to the attention of the medical profession, and of the community in general, than the new method of removing those malformations termed club-feet, and of correcting the accidental deformities of a kindred character, occurring in different parts of the locomotive apparatus. Whether the almost uniform success of the method, or the numerous and painful distortions which it promises to remove, be taken into consideration, it seems justly entitled to a thorough examination and a faithful trial.

The history of this operation having been given in a previous number of this Journal,* need not be repeated here; it may be stated, however, that cases in which the operation has been performed in this country, have been reported by Drs. James H. Dickson,† Detmold,‡ N. R. Smith,§

* May, 1838, p. 116, et seq.
† Am. Journ. Med. Sc. Nov. 1838, p. 96.
‡ Ibid. May, 1838.
§ Ibid. Nov. 1838, p. 61.

Mutter,* Geddings,† Walter,‡ T. J. Garden,§ and Brown;‖ and doubtless it has been performed in other cases, not as yet made public.

The writer of these remarks, has, during the past summer and autumn, performed this operation, in four cases of club-feet, two of which were double and one single, making five operations. Two of the cases were congenital and one accidental.

The first case was that of a boy five years old, in whom the deformity was double and congenital; the first operation, which consisted in the section of both tendines Achillis, was performed in May last.

The deformity in this case was a combination of pes equinus, or Scoutetten's calcanian club-foot, and varus. The heel was so much drawn upwards, as not to permit its being brought to the floor in walking, by two and a half inches.

By a similar retraction of the tibialis anticus and posticus, and of the abductor pollicis pedis, the foot was so distorted as to cause him to walk on the outer portion of the dorsum of the foot, over the bases of the metatarsal bones of the lesser toes. This portion of the integuments, of the size of a half crown piece, had become so much thickened, that the surrounding portions were prevented from contact with the ground.

The retracted tendons were all divided, at three successive operations, at intervals of eight and ten days.

The tendo Achillis was severed, about an inch and a half above its insertion, by a sharp bistoury, inserted between the tendon and bone, its sides towards these parts. The cutting edge being then turned towards the tendon, this part was divided by a cutting motion.

The tibialis anticus tendon was cut, below the anterior annular ligament, and the tendon of the tibialis posticus was divided, just before its insertion into the scaphoid bone; and the tendon of the abductor of the great toe was separated near its insertion, in one foot only.

The extensor of Stromeyer was applied, immediately after the operation, and the heel brought down as much as it would admit, which was about one half: by tightening the extending strap daily, after the first three or four days, the heel was brought entirely down, in about a week. Had the whole operation been completed, at two different times, instead of three, which we think might have been safely done, one third part of the time would have been saved; but choosing rather to err on the safe side, if either, we preferred doing too little, to the opposite extreme.

After the extensor had been worn a sufficient time, to bring the feet nearly

* Lecture on Club-feet.

† Am. Med. Intelligencer, Aug. 1849, p. 145.

‡ American Journ. Med. Sc. Nov. 1838, p. 259.

§ Am. Journ. Med. Sc. May, 1839, p. 257.

‖ Boston Med. and Surg. Journ. Oct. 16, 1839.

into a normal position, or a sufficient degree of extension had been made to bring down the heel, and extend the foot to a little less than a right angle with the leg; a laced shoe, with leg irons attached to an iron sole, with a hinge joint at the ankle, and extending up to a little below the knee, was applied and worn; with cross-bars between the leg-irons, and between the toes, so as to keep the feet in parallelism at all times. This boy was able to commence walking with the extensors on, in one week after the last operation. The laced shoes described, coming high up around the ankle, were now applied and worn, day and night, until the feet became firmly fixed in a normal position. They were removed every day, and the feet and ankles bathed with diluted spirits, with friction, to prevent excoriation and tumefaction.

The patient can now walk, run, jump and dance, without shoes or boots, without any apparent inconvenience; with a slight inclination of one foot inwards, caused by that inclination of the corresponding knee joint.

A calf to the legs has been developed since he began to walk, although there was no appearance of any before the operation, the legs being destitute of any prominences from the knee to the heel.

The second case was a lady, ætat. 28, with congenital double club feet. The feet were turned in, at right angles with the normal position; and the soles so turned upward and backward, that the entire weight was brought to rest on the dorsal or upper surfaces of the feet, over the cuboid bones. The plantar aponeurosis was contracted or shortened, drawing around the metatarsal portion of the foot, so much as to produce a deep sulcus in the sole of the foot, opposite the junction of the tarsus and metatarsus. This so shortened the foot, that it was one inch longer after the removal of the distortion than before. In this case there was very little calcanean distortion, and consequently, the tendines Achillis were not divided; what slight retraction there was, yielding to the extension, made after separating the shortened tendons.

The tendons of the tibial muscles, and the flexor and abductor pollicis pedis, in one foot; and the plantar aponeurosis and the tibials in both were cut at three different times; and the common mechanical means subsequently applied. But so unyielding were some of the ligaments, that much difficulty was experienced, in bringing the feet into a normal position. The ligaments, apparently most implicated, were the inferior culcaneo-cuboid and the deltoid.

We have found the mechanical part of the treatment of this deformity, much the most difficult part; and in one case, the common means used to bring the foot into the desired position entirely failed.

The treatment of this case has been, however, ultimately successful; the patient now being able to walk on the soles of her feet, although the ankle joints are yet weak. They are gaining strength, however, and she is improving in the facility of walking.

The third and last case, was that species of the deformity, by Scoutetten, called phalangian club-foot—the toes and metatarsus being turned under the foot and backwards, so as to bring the dorsal surface of the foot, to occupy the position of the plantar surface, in a natural state; thus subjecting the patient to bear her weight on the top of the foot—this part, by its malposition, being, in function, converted into the bottom of the foot.

The subject was a female, ten years of age. The deformity was accidental—its commencement bore date as far back as the period when she commenced walking. It gradually increased to the state described. The distortion was produced by a retraction, or too short a state of the tendo Achillis and plantar aponeurosis.

By a division of these parts, the foot, in a week, was brought into a natural position; and, in a fortnight subsequent to the operation, she was able, with the aid of the shoe, used in the other cases, to begin to walk with assistance.

Case of Contracted Knee-Joint, by Contraction of the Muscles of the Hamstring Tendons—Section of these Tendons—Straightening of the Limb.—The subject of this case was a boy nine years old, with the marks of a scrofulous diathesis. The knee of the left leg began to enlarge, on each side of the ligament of the patella, six years ago, accompanied with a slight lameness in walking—no pain, tenderness or redness. At this time there was a perceptible tightness of the tendons in the ham, and a disposition to flexion of the limb when in a recumbent posture. This thickening, of the integuments of the joint, was followed by an apparent enlargement of the articular extremities of the bones of this joint. The enlargement, however, never became very great, sufficiently so, to render it distinctly perceptible at sight. About two years since, the boy was found to be affected with an angular anterior curvature of the spinal column, at the junction of the lumbar, with the sacral vertebræ; and the knee-joint more flexed, other appearances of the joint remaining the same. At this time the general health, always good before, appeared to be affected—some loss of flesh and strength, and restless nights. By the use of moxa and caustic issues, each side of the angular projection, kept open for about eight months; and the internal use of sarsaparilla, soda, and the hydriodate of potassa, the disease of the spine was apparently cured. But, now, there was a considerable degree of stoop, or inclination forward, given to that portion of the trunk above the pelvis. In this state Dr. Brown, of Boston, being consulted, advised the application of a mechanical apparatus, to be constantly worn, together with the use of an inclined plane; which seemed to afford important aid in rectifying the forward inclination of the trunk. But, as the straightening of the spinal column progressed, an increase of the flexion of the knee was observable. This straightening of the spine was evidently effected, principally, if not entirely,

at the expense of the unaffected portion of the spine above; for here was evidently formed a counter curve, to the diseased one; that still remaining not materially lessened, by which the trunk has been elevated to an erect position.

For the period of about five years, this lad, in walking, has been able to bring only the toes and ball of the foot to the ground; the heel not coming to the ground, in the ordinary step, by the distance of between two and three inches, the latter part of that period of time. The leg has been a little smaller than the other, below the knee, ever since the commencement of the distortion.

The section of the hamstring tendons, having been proposed last spring, as the most probable means of relieving the deformity, the father, after having taken other medical advice upon the safety and expediency of the operation, concluded to have it done. It should have been remarked, when speaking of the treatment of the first stage of the angular curvature, that it was followed by a gradual and entire restoration of the general health, which has remained without any interruption, good, during all the time since.

On the 15th November, the tendons of the biceps flexor cruris on the one side of the popliteal depression, and of the semitendinosus and semimembranosus on the other, were divided, about two inches above their insertion. There was not a teaspoonful of blood lost. The operation was performed with a slightly curved and sharp-pointed bistoury, which was introduced with the flat surface parallel and close to the inner side of the tendons, with the point upwards, and penetrating sufficiently deep to hook the point of the instrument under the tendon, by gently depressing the handle and turning the blade of the bistoury on its own axis, until it revolved a quarter of a circle, and the edge was presented transversely to the tendon. Then, by a gently sawing motion, depressing the handle, and at the same time elevating the point of the instrument, the parts were divided with but very trifling pain. We have noticed that this sawing motion is much less productive of pain, than where the parts are divided by their tension, over the edge of the instrument, by raising them on the edge of the knife like a lever.

The same precautions were observed here, as in the dividing the tendons in the cases of the club-feet, to make as small a puncture or external opening as practicable, and not cutting through the skin, at any other part, than at the point of the introduction of the instrument.

The punctures were accurately closed by court and adhesive plaster, and a compress and bandage were applied, with a crooked splint outside the bandage; the limb having been extended about two inches, measured at the heel, before the dressings were applied. The flexion of the leg previous to the operation was about 40 degrees.

The 8th day subsequent to the operation, no pain or troublesome inflammation having supervened, a carved wooden splint, with its cavity padded,

and having a hinge joint at the knee, by which the two parts were connected, was applied and confined with broad padded straps passing from one side of the splints to the other, fastening with buckles above and below the knee. On the posterior surface of the splints was fixed a screw, connecting the two splints; by the daily turns of which, the limb was gradually extended until it became very nearly straight, which was effected in a fortnight after the extending apparatus was applied, and three weeks after the operation.

This patient commenced walking as soon as the extending apparatus was applied. He is now able to walk with or without it, bearing his weight on the entire length of the foot; he can place the heel on the ground at every step, which he had not been able to do for about five years.

He is now directed to wear the apparatus by night and half of the day, and leave it off the remaining portion of the time; to use the limb freely, and frequently flex and extend it when the apparatus is unapplied; and to continue this course until a free, easy and entire use of the joint is regained.

December 10*th*, 1839.

ART. X. *A Case of Stricture of the Urethra cured by Bougies of Bark of the Slippery Elm Tree.* By WM. WATERS, M. D. of Fredericktown, Md.

Mr. ———, ætat. about 28, of strumous habit and ill health, informed me that he was threatened with retention of urine from stricture. According to his history of the case, he had laboured under blennorrhœa for *thirteen* years; for the last *three* years symptoms of stricture existed at times, and for the last twelve months his urine always flowed in a forked stream, or twisted like a cork-screw, evidently denoting permanent stricture. For the last year past he had been using the gum-elastic bougie for the twofold purpose of relieving the discharge as well as the stricture. On the 14th of August last I was consulted, when I found him labouring under considerable local inflammation, with purulent discharge, and great difficulty in urinating. By leeching along the course of the urethra and other antiphlogistic means, the active inflammation was reduced in a few days. I then examined the stricture with a bougie, and found it seated about four inches from the glans penis, and admitting only the smallest size gum elastic bougie. I immediately put him on the use of bougies prepared from the bark of slippery elm. They were made very smooth, and of gradual increase of size, shaped like the ordinary gum elastic. Before using they were held a few moments in tepid water, and were permitted to remain in the urethra generally half an hour, sometimes an hour or more, On one occasion, when introduced at bed time, he fell asleep with it in and rested well all night, suffering not

the least inconvenience whatever. With the use of these my patient w delighted; their soothing properties were brought into strong contrast wi the pain from the wonted use of the gum elastic. In one week it was nece sary to enlarge the bougies by glueing the smooth sides of the bark togethe By their use for three weeks with comparatively no pain, the urethra w enlarged to the ordinary calibre. In urinating for the last three months th stream has flowed full and without impediment. In the mean time th discharge diminished as the stricture was dilated. It will be recollecte that the gum elastic in this case had been used not only without improv ment, but with with an aggravation of the stricture. The comparative meri of the elm bougie over other bougies in ordinary use I will leave to the futur test and experience of the profession. But in certain cases of stricture when the more potent are not immediately wanted, I should prefer the emollien and expansive qualities of the elm over the wooden, gum elastic, whale bone ivory, or metallic. For the introduction of the elm bougie to the notice c the profession, I am indebted to an interesting account of the Bark of th Slippery Elm Tree, (Ulmus Fulva,) for Bougies, Tents and Catheters, b William A. McDowell, M. D., of Fincastle, Virginia, published in th Western Journal of Med. and Phys. Sciences, Jan. 1838.

Fredericktown, December 10*th*, 1839.

MONOGRAPH.

ART. XI. *On Dyspepsia, or Indigestion.* By N. CHAPMAN, M. D., Professor of the Theory and Practice of Medicine in the University of Pennsylvania.

To the refinements of civilization we are mainly indebted for the prevalent and troublesome affection which has received this title. It seems scarcely to belong to the savage or barbarous condition, and comparatively seldom occurs among the lower or labouring people of active occupations and sober dispositions.

As we deviate, however, from nature in the cultivation of our sensibilities, moral or physical, or in our habits or pursuits, particularly in our modes of living, so are the exposures to it widened or multiplied.

No more, probably, than in the brute creation, should we have vitiated digestion, were it not for an artificial scheme of life. But in the present state of society, so pervading is it, that no age, sex, or rank, or condition, entirely escapes. Children occasionally have it,—the annuated are not exempt from it,—we see it as much in women as in men,—it is the affliction of the studious, and has become the annoyance of the sedentary trades man, artificer and manufacturer, though it scourges above all—the votary of fashion, the indolent voluptuary, and the grosser sensualist or debauchee.

Dyspepsia, strictly defined, means difficult, bad, or disordered digestion. But the function suffering variously, as well in degree as kind, the title applied to its derangements may not always adequately express their several modifications.

On this account writers have substituted other appellations, which, however, are equally vague and indefinite, such as the spleen, vapours, melancholy, hypochondriasis, biliary derangement, &c. Egregiously, indeed, have we erred in this instance, by a contemplation of an effect only, and that as an incident to the stomach exclusively.

Digestion is a series of operations of a very complex apparatus, any one portion of which being out of order, the function becomes in a greater or less degree deranged;—and it is this derangement of machinery, and not the vitiation of product, which is really the object of reparation. As well might the morbid discharges in any of the profluvia be held to be the essential disease, as here the imperfect concoction of food be so deemed. Equally in each case are these the result of an antecedent lesion of parts, and being simply consequences, must be kept up so long as such lesion may endure.

In adhering to the term dyspepsia I am therefore led, rather in compliance with usage, than from considering it as declaratory of any just pathological views, which are only attainable by a careful investigation of the state of those structures concerned in the performance of the assimilative offices.

It is obvious that to present a full exposition of the subject, it were required to treat of indigestion as it exists in, or is dependent on each and every part of the alimentary canal, and of the subsidiary or collatitious organs. Nearly as much of the process goes on in the upper and lower bowels as in the stomach itself, not to mention the indispensable contribution it receives from the liver, pancreas, the lacteals, or its final consummation in the lungs by the conversion of chyle into blood. Diverse, too, are the conditions of these several portions of the digestive apparatus when the function is disordered, each of which should be no less indicated to complete the exhibition.

The execution, however, of such an undertaking in detail as is imposed by so extensive a view, not now proposing, I shall apply myself chiefly to the more ordinary forms of the affection, as well in regard to their position as nature.

Commencing with those of the stomach, some attention will hereafter, when coming to the consideration of the diseases of other organs engaged in digestion, be appropriated to their share in influencing the dyspeptic condition.

Dyspepsia may be either acute or chronic. It is often suddenly induced by an offended stomach, and mostly passes away without attracting any regard, though in children especially, by permitting repetitions of attack, from continued indulgences, it sometimes becomes speedily rivetted and confirmed. The affection, however, of adult or more advanced life, such as this term is conventionally restricted to, is of gradual formation, creeping on for a season so slowly, in some instances, as scarcely to be recognised, or at least to excite any serious complaints.

Symptoms.—Both in the mode of its approach, and rapidity of development does it differ. But on an average, I think it is distinguished in the commencement by a sort of general *malaise*, or indefinite wretchedness, attended by a sense of oppression after eating, at the epigastrium, sour eructations, sometimes vomiting, loss of animation and inclination to exertion, mental or corporeal, with a feeble, accelerated circulation, lowness of temperature of the cutaneous surface, and which is somewhat pale and dry.

This state may last for a considerable period without any material detriment to health, though each meal shall reproduce the same sort of distress. The case being more evolved, there are gnawing sensations in the stomach, especially when it is empty, or a sense of sinking, with slight constriction of the throat,—the tongue soft, flabby, flat, and slightly covered by a whitish or brownish fur,—the bowels constipated, the breath foul, the secretions defective, and increased languor and listlessness of mind and body are alike manifested. Chilliness, greater palor, and reduction of the pulse, immediately after eating, take place, soon followed by headache or heaviness and somnolency, which when indulged, the sleep is disturbed, and so far from refreshing, the individual wakes up still more uncomfortable, or even very miserable. The appetite is not always the same, or the powers of digestion equally affected. Each is ordinarily much impaired—but the former is sometimes invigorated or craving, and the latter, though lingering, ultimately pretty well performed, judging from the aspect of the stools, which, with the exception of a want of bile, may be natural, and certainly without any mixture of unwrought alimentary substances. In other instances, however, the appetite is nearly gone or becomes ex-

ceedingly depraved, soliciting even the most outré or improper articles, as chalk, dirt, pickles or acescent unripe fruits, &c.

Continuing for any length of time, and occasionally from the very beginning, the disease implicates more conspicuously the mind, producing great fretfulness of temper, turbidness and confusion of ideas, or extreme dejection of spirits, amounting even to inveterate hypochondriasm. To such an extent, indeed, may the intellectual faculties be affected, that the usefulness of the person is utterly destroyed, complaining perpetually of inability to manage the most ordinary concerns. "He," says an old writer (Cheyne), "who would have a clear head, must have a sound stomach." The connection between these organs and their reciprocal influence on each other, are certainly very close, as is exemplified both in health and disease.

As dyspepsia advances farther, new or aggravated symptoms are disclosed, and now we have pyrosis, gastrodynia, cardialgia, flatulence, with putrescent, niderose belchings, or great distension of the epigastrium and extreme irritability of stomach, the aliments being puked or regurgitated or rather *sputated* as soon as swallowed, one or more of these affections existing, to which may be added obstinate constipation, the stools when procured being various, though usually of a firm consistence, of a clay or slate colour, indicative of the absence of bile, or are accasionally light, soft, and frothy, mixed with portions of undigested food, and the discharges attended with some nausea and griping. The skin, too, which from the first, is dry, now becomes more so, or is even husky,—changes its palor to a dingy or sallow hue, and the countenance has the expression of anxiety or haggardness.

These are among the more customary symptoms of an aggravated attack. But we occasionally meet with some abnormal affections, such as an uneasiness or an ache in the breast, side, the right side at first, though I have known it otherwise, or in the left, or of the head, and with no little perversion or disorder of vision. As regards the complaints of the eyes, these are sometimes very extraordinary. More than once I have seen the vision doubled—still oftener inverted—and in one instance temporary blindness. Not less common is vertigo, tinnitus aurium, headache, acute tenderness of the scalp, and palpitations of the heart. Now and then the nervous and muscular systems are prodigiously affected. Hysteria in females is common, and I have met with tetanoid convulsions so violent as to require the united strength of several persons to restrain the patient in a paroxysm.

Not arrested, the case is prone, in some instances, henceforward to assume a different aspect. Extreme atony of the stomach, with general debility and derangement of health, sometimes takes place, especially in those of delicate or depraved constitutions. But in other instances the vascular system, hitherto little disturbed, now becomes implicated, shown by a hard, quick, corded pulse, hectic flushes, dry parched skin, burning in the palms of the hands and soles of the feet, clean polished tongue, or, what is more common, the centre heavily loaded, with polished tip and edges, great thirst, or rather a demand for cold or acid drinks, a sense of fulness and distension in the epigastric and hypochondriac regions, with tenderness on pressure—heat of stomach and aphthous ulcers of the mouth, or a full crop of eruptions in the face. The urine, which in the previous state of nervous irritation, had been copious and pellucid, at this period under-

goes a change, depositing a lateritious or pink sediment, or is oily on the surface, as in some instances of diabetes, owing to defective digestion and assimilation of the food. The bowels, heretofore costive, now are apt to give way, and diarrhœa becomes the habit of the body. Extending to the lungs, this gastric irritation sometimes induces pulmonary disease, at first, catarrhal, gradually simulating tubercular consumption. Generally, however, there is a gradual wasting of strength and emaciation, particularly of the lower extremities, with sometimes numbness or immobility, so that locomotion can no longer be performed, the limbs dangling as if paralytic. The case now is essentially chronic gastritis, diversely complicated with nervous or other affections. Let it not, however, be supposed that such is the uniform tenor of the disease. The reverse perhaps oftener happens, or it pursues a course of infinitely less violence, occasionally varied by mitigations or exacerbations, and with these alternations endures for an indefinite period, till finally an entire recovery takes place, or it degenerates into a hopeless state of constitutional depravation. On this occurring, unequivocal as may have been its original aspect and character, dyspepsia sometimes becomes exceedingly obscure, or is entirely concealed by the absence of its peculiar signs, or disguised by the livery of some different disease. Cases of this description may proceed from an affection of some one or more of other organs, which, we are presently to see, from the extension of their irritations to the stomach, induce the dyspeptic condition, or by the latter spreading its influence to these same parts they become involved, so that in either mode a complication arises of extraneous and sometimes of predominant symptoms. Dyspepsia, in a word, is lost sight of in the prepotency of a foreign lesion.

Causes.—The causes of this affection are such as act directly on the stomach, or indirectly through the intervention of other portions of the system. Of the first, among the most operative, are indulgences in eating or drinking, so as preternaturally to stimulate or distend the stomach—or the use of certain unwholesome or imperfectly cooked articles, or an undue limitation of diet, as is practised to reduce obesity, or to subdue protracted diseases. The most opposite modes of living, the full and stimulating, or the penurious and abstemious in extremes, are alike productive of indigestion. Examples of the latter are not so common, though still familiar, more especially to be deduced from females in high life, desirous of acquiring, or retaining delicacy, or attenuation of frame. By an exceedingly low diet, too long maintained in the management of disease, I have frequently witnessed the same effect, or perhaps, actual gastritis, or with the irritation thus created, the tongue becoming florid, the epigastrium tender, &c. The ultraism in this respect, resulting, in no slight degree, from the dominion of a set of notions imported from abroad, I am convinced has proved a fruitful source of gastric derangements among us. Even more it has done, however, by vitiating the whole nutritive processes, thereby inducing a state of cachexy, affecting both the solids and fluids. From absolute starvation, analogous, though more prompt and exacerbated consequences arise, of which we have striking evidence in shipwrecked mariners deprived of food, and in the experiments of starving animals. Emptiness, in any way, proves what has been happily called the "Stimulus of inanition," as we see in the sudden withdrawal of the water in ascitis, and I may add, parturition, each being apt to be followed by fever. But in the case of inadequate supply, or total want of nutriment

and drink, there is, with the influence of emptiness, the irritation of hunger and thirst.

The most pernicious articles in excess, are acid, vinous, malt or spirituous drinks, especially in the shape of punch, or strong green tea, or coffee—exclusive vegetable matter, especially if it be crude or flatulent—or gross animal food, whether fresh or salted, or smoked—many of the condiments, and nearly all the things included in the term dessert.

Taking, habitually, drugs, conduces to the same end as the frequent repetition of emetics, or purgatives, or opiates and other narcotics. Tampering, however, with any medicine or medicines, so much the practice with some people of valetudinary dispositions, is very detrimental. Every ache or discomfort, real or imaginary, must be relieved by a recurrence to some supposed remedy, till finally, the powers of the stomach are worn out, and derangements, either functional or structural, take place. It would be salutary were such people constantly to bear in mind the epitaph of the Italian count, who fell a victim to this bad habit:

"I was *well*,
Wished to be better,
Took physic, and *died*."

Nor can the profession escape the imputation of lending its contribution to this mischief. Called to a case of disease of such obscurity, that no distinct notion can be formed of it, we go on groping in the dark, pouring down drugs empirically or at least tentatively, till the stomach gives way, and its derangements are added to the pre-existing affection, by which a case is made of greater complexity, and of enhanced difficulty of cure. It is not easy always to avoid this course, from the ignorance or prejudices of mankind. The predominant estimate of the profession, even among the most enlightened people, leads to the delusive supposition that the materia medica has a remedy for every disease, and that the want of success under any given circumstances, is owing to the poverty of resource of the practitioner in attendance. Confidence is soon withdrawn should he intermit his exertions, which perceiving, he too often multiplies his administrations to avoid a dismissal, or to have imposed on him some one of the fraternity, who it is expected will bring forth fresh supplies. The consultation taking place, the new armoury of weapons is opened and applied, with only an exasperation of the case. Not satisfied, however, further trials of others are made—there is a repetition of a similar proceeding, and the catastrophe is completed. This, which might by some be suspected as a sketch of fancy, is a faithful and unexaggerated delineation of a reality, I have frequently seen and deplored. Convinced that he was falling a victim to this very practice, the Emperor Hadrian deliberately prepared as an inscription for his tomb:

"It was the multitude of physicians that killed the Emperor."

The causes which I shall first mention as operating through the medium of the system on the stomach, are sluggish or sedentary habits, and intense study or application to business within doors, or any perturbating or depressing passion or emotion long indulged. It is an interesting fact, that while exercise is promotive of the health of the corporeal functions, the occupation of the mind, when intense, at least, has a contrary tendency, particularly as to those of the stomach, and hence the student, or the afflicted, or care worn, is nearly always dyspeptic.

Dress, too thin, or inappropriate to the season, has, also, a material influence. Cold to the exterior surface, and particularly to the feet, irritates the internal surfaces, and often that of the stomach. More, however, is to be ascribed to the modern fashion among females of tight-lacing, which, by mechanical pressure, affects the stomach. We learn from a late French writer, that corsets cause half the dyspepsia of Paris, and that, in several cases, the stomach was found on dissection permanently contracted in the centre, like an hour-glass, by the compression. Great mischief from this preposterous custom has come under my own observation. Not to mention other injuries from it, I can confidently state, that I am habitually consulted for dyspepsia and its associate affections, assignable to this fantastic usage.

The most common of the causes of the disease, in certain parts of our country, is the enormous consumption of tobacco in the several forms. Certain I am, at least, that a large proportion of the cases of it, which come to me, are thus produced. It is usually very obstinate, and sometimes of a truly melancholy character. Easy as it were to cite numerous instances to this purport, I must be content with a limitation.

By a member of congress from the West, in the meridian of life, and of a very stout frame, I was some time since consulted, who told me, that he laboured under the greatest physical and moral infirmity, which he was utterly unable to explain, and that, from having been one of the most healthy and fearless of men, he had become, to use his own phrase, "sick all over and as timid as a girl." He could not present even a petition to congress, much less say a word concerning it, though he had long been a practising lawyer, and served much in legislative bodies.

By any ordinary noise he was startled, or thrown into tremulousness, and was afraid to be alone at night. His appetite and digestion were gone—he had painful sensations at the pit of the stomach, and unrelenting constipated bowels.

During the narrative of his sufferings his aspect was ghastly, approaching the haggard wildness of mental distemperature. On inquiry, I found, that his consumption of tobacco was almost incredible, by chewing, snuffing and smoking. Being satisfied that all his misery arose from this poisonous weed, its use was discontinued, and in a few weeks he entirely recovered.

Distressing as was this case, I have seen others, from the same cause, even more deplorable. Two young men from the country were in succession brought to me for advice, whom I found in a state of insanity very much resembling delirium tremens. Each I was told had chewed and smoked tobacco to excess, though perfectly temperate as regarded drink, and which representation proved to be correct. The farther account given me was, that early in life, adopting this bad practice, it grew with their growth. Dyspepsia soon occurred, attended by great derangement of the nervous system, and ultimately the mania I have mentioned. But I have also seen the same condition very speedily induced.

Three years ago I was requested to visit a young man at one of the hotels in this city, who had been a resident in it for several weeks. The general aspect of the case so strikingly resembled delirium tremens, that I at once pronounced it to be that affection. But I was assured of his sobriety, and that he had been brought to his present situation by having kept his bed for several days, under the influence of nostalgia, during

which period he actually subsisted on tobacco. More recently, I saw quite a youth affected in precisely the same manner, owing, most unquestionably, to the exorbitant use of cigars. Both of these cases were cured chiefly by abstinence from this pernicious practice.

These are the prominent occasions of what may be termed idiopathic dyspepsia. As already intimated, it is, however, sometimes a symptomatic affection, emanating from a diseased state of other parts—the gums, bowels, the liver, the spleen, the pancreas, the kidneys, uterus, the brain, spinal marrow, &c.

The sympathy between the gums and stomach is illustrated more especially in the painful dentition of children, in which the latter organ often becomes seriously disordered. As an example of this connection, leading to dyspepsia, the case I shall relate may suffice. Many years ago I was consulted by a lady from Natchez for the disease, of long continuance, and of a very harassing nature. Discovering that her gums were highly irritated, from a very bad state of her teeth, I suspected them to be the cause of the suffering, and had all the carious ones extracted, by which, without any medicine, she in a short time recovered. But, in a few months, having an artificial set, which being badly adjusted, was productive of much irritation, the dyspepsia returned with equal violence, and again ceased on the removal of the teeth. These being subsequently well arranged, she has since worn them without any recurrence of the disease. Teeth, in another mode, may have a similar effect, as when in such a condition as no longer to perform mastication.

That the more ordinary disorders of all of the chylopoietic viscera, may be reflected on the stomach so as to produce this effect, and that even to functional constipation it is often owing, is well known. But occasionally I have seen it, and of the most inveterate character, dependent on intestinal strictures. In 1826 I attended, with the late Dr. Physick, a young friend of mine, in one of the most inveterate attacks of dyspepsia that I ever encountered. Baffled in our endeavours to cure him, he went to Europe, and consulted there, successively, the most eminent physicians, who took the same view of the case. Dying, finally, in Paris, he was opened by the celebrated Beclard, who informed me, that the only important lesion was a stricture of the colon, to such an extent, that a small quill could scarcely penetrate through it. From strictures of the rectum, which are far more common, I have frequently seen the most afflicting dyspeptic derangements induced, and what, perhaps, has been less suspected, occasionally, by hemorrhoidal derangements.

Two cases, from several more which I might adduce, may adequately illustrate this point. My attention was particularly called, some time since, to that of a middle aged gentleman, who had suffered several years so severely from dyspepsia, that even his life was deemed in jeopardy. The disease was exceedingly well marked. Learning that during the whole time, with scarcely an intermission, he had been annoyed by painful hemorrhoids, these were removed, and almost immediately he recovered his health.

Even a worse case, in a gentleman somewhat younger, subsequently came under my care. To great emaciation and hectic irritation, were added a condition of stomach which almost precluded the retention of nutriment of any description. More or less of whatever was received, soon returned by a sort of spasmodic regurgitation? Every evening he became

excessively oppressed, and was only relieved by vomiting of a very large quantity of a corrosive acid fluid;—which, on different occasions, being deposited on the grass of his garden, this was as completely killed, as if by salt and water poured on it. No course of treatment I could devise proved of any essential service to him, till having ascertained that he had long been afflicted with piles, a circumstance previously concealed from me, they were extirpated, and with the happiest effect.

Nephritic affections are very apt to bring the stomach into dyspeptic states;—and, perhaps, from no source does it suffer more in this respect, than by the uterine derangements. Every one of these, indeed, of any inveteracy, conduce to indigestion, though it is mostly found in connection with the irregularities of the menstrual discharge.

Chronic eruptions, especially of the face, repelled by cosmetics or other means, sometimes, moreover, occasion it, and also the repercussion, or metastasis, or misplacement of other diseases, one of the most prominent instances of which is afforded by gout. Destined to the articular structure as its proper seat, if this is prevented in any way, it never fails to harass the internal organs, and especially the digestive. Every practitioner of any experience must be familiar with examples of dyspepsia, even of the most fixed and obstinate character, immediately relieved by a regular attack of podagra. There is, indeed, much reason to suspect that no small portion of the cases of indigestion is really gout in its atonic or misplaced states, and I am sorry to say that the vast increase of derangements of this sort, which confessedly has taken place of late years, may be plausibly ascribed to the partial reformations of our habits of living. It will hereafter appear, that regular gout formerly prevailed to an enormous extent in this community, at a period when even its highest society was sullied by an inordinate consumption of wine. This constant stimulation drove it on the extremities;—but, since we have become more temperate, it is still generated, though so feebly as to linger among the digestive apparatus, precisely as it does in women of moderate propensities to drink. We have, in a word, exchanged podagra for dyspepsia, and to get clear of both in a greater degree, severer restrictions must be imposed on our potations—and perhaps, also, on luxurious feeding.

No two organs have more intimate relations than the brain and stomach, or so uniformly reciprocate their affections, and hence dyspepsia is a common product of cerebral disturbance, either physical or moral. An allusion to the effect of the latter has been previously made. As frequently, however, is it to be traced to lesions of the spinal marrow, and especially to those of the medulla oblongata, as might be presumed from the control of the nerves, emanating from this source, over the digestive operations.

Diagnosis.—In its more simple and elementary forms, gastric dyspepsia is readily recognised. But very different is it as to some of its anomalous modes and complications. The cases with which it is most apt to be confounded, are certain states of the duodenum, and of that part of the colon which passes nearest to the stomach. These portions of the intestinal tube are probably in the same condition as the stomach itself, or, in other words, that the part of the digestive process assigned to them is interrupted, and, of course, essentially similar phenomena are presented. By a careful observation, however, they may generally be discriminated. Not to anticipate what I shall hereafter have to say, when treating of these intestinal affections, I shall now only remark, that, in the duodenal, the

imitative symptoms of gastric dyspepsia, such as oppression, &c., come on much later after each meal, or not until the food has escaped out of the stomach;—and that in the case of the colon, the process of fæcation is badly performed.

Complicated, however, as dyspepsia usually becomes in its progress, it is extremely difficult to arrive at a just diagnosis in all cases. The object of our inquiries, under such circumstances, should be, to ascertain whether the case is a primary or secondary affection, as the treatment is modified accordingly. Being satisfied on this point, or that the stomach is the original and actual seat of the affection, we are next to endeavour, as equally important, to determine its precise condition, how far it is simply irritated or inflamed, functionally or more seriously disordered. The discriminating signs here need not be repeated. But there are some purely nervous states of the stomach which must not be mistaken for dyspepsia, and to these I shall now call attention.

My intention is first to speak of what is denominated an *irritable or sensitive stomach.* Generally, there is here no great uneasiness in the viscus till food is taken, when pretty violent pain is at once occasioned, and continued in some degree throughout the digestive process, which is lingering. The pain may be that of heat or scalding, or tensive gravative or oppressive, or constringing, in the latter instance, extending up the œsophagus, productive of stricture of the throat, and, at the same time, some pain is felt between the shoulders, particularly under the scapulæ. The appetite is variable, not often, however, materially impaired, there is no thirst, and though a tendency to constipation exists, the stools are not changed. Discharges of urine are more frequent, paler, and copious, than natural. The tongue is usually clean, and never heavily coated, the skin unaffected in temperature or other respects, and nothing is very striking in the external aspect. But what is very peculiar, with apparently such trivial suffering, a constant querulousness prevails;—the temper fractious and impatient;—the spirits alternately excited and depressed in quick succession, and the attention wholly engrossed in watching the fluctuations of the disease, from which it can be temporarily diverted only by the most amusing conversation, or business of the deepest interest. Characteristics so prominent as the foregoing, I think, may distinguish this from its kindred affections.

Gastralgia, the second of these affections, seems to be essentially the same as the preceding, modified mainly by a more chronic condition. Be this, however, as it may, it is of a strictly neuralgic nature, and among its prominent features are the following. The pain of the stomach is occasional or intermittent, sometimes of great severity, darting or spasmodic, and is relieved rather than aggravated by pressure, and the tongue is little or not at all changed, there is no thirst, or desire for cold or acid fluids, the appetite is sound, and the eating of solid food, instead of increasing the uneasiness, is usually palliative for the time, though some hours afterwards oppression is felt, and which may be followed by a cholicky affection. Long as it may endure, with few exceptions, no hectic irritation is experienced, and the strength, flesh, and complexion are preserved. Though the moral and intellectual condition suffers, it is peculiar to gastralgia that, on any temporary emission of the affection, a complete restoration, in these respects, takes place. These are circumstances in which it is opposed to both gastritis and dyspepsia.

It will be well in all our reflections on the subject, to advert to the fact, that there is scarcely a complaint in which the stomach does not participate;—and, whether sympathetically or idiopathically affected, from its immense influence, its derangements must be rectified, as a prerequisite to the restoration of health.

Prognosis.—The prognosis in dyspepsia is mainly to be derived from the character of the cause occasioning it, the stage of the case, the period of life, the habits of the patient, the general soundness of his constitution, his temper, and disposition to submit to a course of treatment, unavoidably one of privation, and commonly protracted.

No cause, perhaps, tends more to defeat our efforts in dyspepsia, and to enrol it among the reproaches of our art, than the multitude of remedies in vogue for the disease;—the perpetual recommendation of them by impertinent, or irresponsible advisers, and the easy credulity with which they are received, so that no uniform or permanent plan of cure is maintained. Not uncommonly, indeed, does it happen, that while the regular practitioner is pursuing a course cautiously adopted, and conducted in every step by the best lights of science, he is thwarted by the interposition of a countervailing nostrum, or entirely replaced by some presumptuous impostor, who commands confidence long enough to commit irremediable mischief. The season has scarcely passed away, since a practice originating in such a source, pervaded the United States, claiming as its only means, punching the stomach severely every day, and this ruffian method being indiscriminately applied to all conditions of the organ, inflammatory or otherwise, proved as disastrous as was predicted by those who, by their intelligence, were prepared to foresee the results. Can it be required of me to go on with other and similar disgusting recitals?

Few diseases, however, in itself, are more embarrassing than this to the practitioner of inexperience, especially owing to the number and diversity of analogous lesions of the stomach, or which requires greater discrimination in the management. The fact is, that our notions, generally, of dyspepsia are still vague and undefined. No derangement of the stomach, mediately or immediately, however trivial, can exist, without disturbing digestion;—and whenever it becomes at all permanent, is too often vaguely included under the denomination of dyspepsia.

Taken in the commencement, dyspepsia may nearly always be cured, provided we can command a strict adherence to our orders. But where we fail in this respect, which often happens, or the case is connected with organic lesions of the stomach or other parts, it will mostly prove otherwise, and all that can be done is to palliate what cannot entirely be relieved.

Anatomical Characters.—The appearances on dissection, in this disease, are not well understood. As regards the earliest stage, our information is particularly defective, since death never takes place from it alone, at this period—affording opportunities for an inspection. No marks of actual phlogosis would probably be found;—the case now being one of nervous irritation, with some degree of vascular excitement probably. In the second stage, in many instances, the evidence of inflammation is betrayed of the most conclusive character. Being very protracted and violent in its nature, the disease often, indeed, leaves behind it, as demonstrated by dissection, the phenomena of chronic gastritis, which will not be recapitulated. In drunkards it is not unusual, we have been told, to meet with the surface of the stomach smooth and polished;—the rugæ, or villi, having been re-

moved by the process of absorption, from the constant irritation applied to the mouths of the lymphatics, by the stimulus of strong liquors. This, which is the statement of the older writers, I presume to be the case of ramollescence, where the mucous tissue is softened and detached;—rendering the other coats more or less bare and exposed. Be this as it may, it is, in such instances, that we generally meet with scirrhosity of the pylorus or cardia, or erosions or ulcerations of the texture of the stomach, and various lesions of the intestines, particularly the duodenum or ilium, and with also, occasionally, of the spleen, pancreas, and other viscera.

Of the *pathology* of dyspepsia, I have in the first place to remark, that two circumstances among others of subordinate importance, seem indispensable to gastric digestion—that the solvent fluid of the stomach be pure, and of adequate quantity, and that, at the same time, the organ be so retentive of its muscular power as to bring its parietes to embrace the aliment, and afterwards to propel the chymous product in due season into the duodenum. Thus is the process mainly accomplished, and it being in either respect affected, unavoidably falls into derangement, constituting indigestion. But aberrations in the function may differ according to the part of the agency impaired. The solvent liquor being properly supplied, concoction goes on pretty well, though the product may linger behind, from a deficiency in the propelling power, and we have slow digestion, or conversely, the action continuing perfect, and the former wanting, the ingesta pass into the duodenum—sometimes, throughout the bowels, more or less unaltered, even as in lientery. But inasmuch as each part of the agency, the solvent liquor, and the muscular power, has a common source in the nerves, they are usually alike affected, and the operation in both respects is abnormally performed.

Confirmatory of the preceding views, an appeal may be made to the *modus operandi* of the causes of dyspepsia. Thus improper regimen, in the widest sense of the term, the abuse of medicines, especially the narcoctics, including that of tobacco, the mental emotions and perturbations, and depressions as well as the derivative irritations from remote parts, all seem to act primarily on the organic nerves of the viscus, affecting innervation.

Common experience, indeed, teaches that these causes directly annoy or disturb the stomach, vitiating appetite, and weakening the digestive energies. By habit the stomach may become reconciled to the influence of some of them, though it is oftener otherwise, and by continuance the effect, in the beginning slight, or transient, may be converted into the worst, and most enduring depravations.

The influence of the nerves going to the stomach, on which experiments show that digestion also materially depends, being interrupted, the process is farther disordered, and, at this stage, we have as the result acid eructations, flatulence, nausea, languor, and mental and corporeal inquietude, &c. The muscular power of the organ, equally proved to be controlled by the nerves, likewise suffers from a similar cause, and hence it is incapable of urging on the contents, and the sense of weight and oppression occurs. The stomach in fact is thrown into a state analogous to some of the forms of constipation of the bowels—and which state, indeed, may be shared by the whole alimentary canal.

But this explanation, so far, regards only the early period of the disease. As it advances, inflammation may occur, sub-acute or chronic—

and, through the sympathy which exists between the stomach and the rest of the chylopoietic viscera, the latter become involved in the same condition, to a greater or less extent.

It is at this period may be discovered tenderness of the epigastric, and next of the hypochondriac regions, the right especially—with the other evidences of more serious hepatic disorder, such as a suspension or vitiation, in various gradations, of the biliary, and perhaps, also, of the pancreatic secretion, attended by the febrile movement, and universal derangement of health.

Both the nervous and vascular functions being thus implicated, it is quite clear that this condition cannot remain long without inducing structural disorganization, and such is proved autopsically. It sometimes happens, however, that the stomach early acquires an exquisite degree of irritability or sensibility—which, instead of passing into inflammation, its more ordinary termination, becomes chronic, and in this mode gastralgia is constituted—or, by the want of innervation, it loses its muscular power and falls into extreme torpor and atony.

Contemplating this series of phenomena, it is impossible to resist the conclusion, to which I have several times adverted, that in dyspepsia there is always some modification of positive disease of the stomach and its connections, of which the irregularities and imperfections in the act of digestion are consequential and dependent.

Treatment.—This brings me to the treatment of the disease. Exceedingly various as I have shown it to be, all which can reasonably be expected from me, is to point out the course applicable to the largest number of cases, and its more customary shapes—and I begin with the idiopathic form of the disease, and that where the stomach is primarily concerned. By a review of the practice hitherto pursued, we shall see that, generally, it has been very empirical, or destitute of any fixed or enlightened principles. As in every other case, the only correct guide to its management is to be deduced from its pathology. Dyspepsia, according to my exhibition of it, consists of nervous irritation in its commencement, and hence plainly requires the means best calculated to calm or remove this condition.

For the most part, it is well to let the stomach alone, or forbearing the use of every sort of internal medicament, and particularly of any activity, to endeavour to abate and draw away the irritation to the exterior surface by a combination of depletory and revellent means,—the chief of which are local bleeding carried to an adequate extent, and then rubefacients, sinapisms, vesicatories, or the emetic tartar ointment or croton oil, so as to induce pustulation. As to the place of application of these means, we must be governed by the notion entertained of the source of the irritation. Conceiving it to be seated in the ganglionic nerves, it is preferable to make it to the epigastrium—or its appearing to be derived from the cerebral or spinal, in the vicinity of those nerves. By this simple plan, aided by the regimen hereafter to be pointed out, I have met with no difficulty in arresting the progress of the disease, and am persuaded, from ample experience, that it is the one which alone will be found to be productive of any uniformity of success. As corroboratory of the correctness of this view, in theory and practice, it may be remarked that whenever a metastasis of the irritation takes place to the surface, as an efflorescence or any other form of eruption, relief is ordinarily afforded. Nor to the other and rarer form of the disease, dependent principally on a want of

muscular contractility alone, from imperfect innervation, have I found this plan less applicable. It might, indeed, be affirmed to be more prompt and effectual under such circumstances. Cases without number have I known, with a permanently distended stomach, and the indescribable wretchedness of this state, which, after refusing to yield to every variety of internal remedy, were very speedily cured by the topical applications to the exterior just enumerated.

Nevertheless, it is the practice of many to meet the earliest indication in the management of the disease, by cleansing the stomach by vomiting, of all crudities, so as to free it from extraneous sources of irritation, and thus prepare the way for the reception and efficient operation of the subsequent remedies. An emetic, however, surely is not always demanded, and might prove even detrimental by an indiscriminate direction. The case, perhaps, to which it is only adapted, is such as proceeds from crapulency, or where there are acid sordes or other vitiated secretions, too abundant to be corrected by simple means;—and, even here, an appeal is not to be made to it, without a conviction that no phlogistic irritation prevails. Determining, however, to resort to it, by general consent, ipecacuanha is preferred as sufficiently powerful, and as, at the same time, exerting, as is thought, some more permanent impression on the disease.

Co-operating in the same design, clearing the primæ viæ, it is very common to follow up the emetic by an efficient purgative. Most of the preceding remarks apply with equal pertinency to this remedy. It is called for only by torpid or loaded bowels, unrelenting to the milder laxatives. No preliminary evacuations, however, are ordinarily exacted either way, the general purpose being so to regulate the alimentary canal, as to obviate constipation in any part of it. This last is an important consideration, and in the selection of the medicine some skill is to be exercised. Drastic articles are to be avoided, with the exception chiefly of rhubarb, if it may be so deemed, which has been much and advantageously prescribed.*

The alimentary canal being in a proper state, tonics may sometimes be resorted to with propriety. Before, however, entering on the use of such articles, we ought carefully to ascertain whether phlogistic irritation does not exist in the stomach. Trivial as it may be, they are inadmissible—and it is one of the greatest errors committed in the treatment of this disease, inadvertently to employ such means.

Too generally, is dyspepsia considered considered merely as a state of debilitated stomach, and managed accordingly—whereas, in the earliest stages, it is usually associated with much irritation, often followed by inflammation, though so slight, as not always readily to be recognised. Yet there are undoubtedly atonic conditions of the viscus, and it is to these that tonics are suited.

Diversified as is this description of articles, they have almost all been tried, and with various results. The vegetable bitters, especially the gentian, the columbo, the quassia, the hop, and the Peruvian bark have been

* The following formula is the best which I have ever tried: ℞. pulv. rhei. ℥ij.; pulv. ipecac. gr. x.; ol. carui. gtt. x.; Syrup commun. q. s. Ft. mass. et div. in pillulæ xl. Two or three of these pills may be taken at bedtime when required. They are so gentle in their operation, that they have been quaintly called the *Peristaltic Persuaders.* Combinations of rhubarb, aloes, ipecacuanha, and Castile soap, are however also very good, and, perhaps, not less so, the ensuing mixture, of which an ounce or more may be taken *pro re nata.* ℞. Pulv. rhei. ℥ij.; Pulv. gentian. ℥j.; Sodæ carbon. ℥ij.; Aq. font. ℔j.; M. Ft. Infus.

chiefly directed. The latter had, at one period, an indisputable reputation, though at present less than, perhaps, any one of the preceding medicines. It is prescribed in tincture, decoction, or infusion, the last answering best, with the addition of some aromatic, as orange-peel, to render it more grateful. My own experience, however, does not allow me to recommend the bark, except in one shape of the disease, presently to be noticed, much as has been said about it, and general as were the attestations to its efficacy. Nearly always it oppresses the stomach and is sometimes rejected. These objections, it is true, do not apply to the sulphate of quinine, which should be preferred, and may be useful. The hop and quassia I have given, and not without utility, the former of which, being peculiarly suited to the case of drunkards.

Nevertheless, in my opinion, the mineral tonics evince superior powers, and above all, the martial preparations, of which there are so many, that a considerable latitude of choice is allowed. The sub-carbonate or rust of iron is one much employed in powder or pill, with a small portion of ginger, or in the form of an aromatic chalybeate wine. The officinal wine, made of the tartarised iron, is too a neat and appropriate preparation, and not less so, is one prepared by digesting for three weeks, two ounces of iron wire, with the addition of orange-peel, in a quart of hard cider. The tincture of the hydriodate of iron has, also, of late, acquired considerable repute, and, I suspect, deservedly. Yet, on the whole, I am inclined to prefer the phosphate of iron to all the martial preparations, given in pills of two or three grains several times a day, alone, or in union with the sulphate of quinine.

Great, however, as may be the benefit which sometimes accrues from tonics, they are, for the most part, unnecessary, very often injurious, especially when long continued, and, probably, such cases may be safely, and, perhaps, more advantageously confided to a well ordered regimen, occasionally interposing some gentle aperient. It is to be inferred that tonics, after a trial of a few days, making no favourable impression, are inappropriate to the case—to be hence abandoned, and a recurrence again had to the external means formerly mentioned.

Complications.—The simple and least obdurate form of dyspepsia, is managed in the mode I have described. As the disease proceeds, however, it is marked by more vitiated secretions, and complicated by diverse affections. Cases of this description, particularly where the secretions are excessively abundant and depraved, occur, generally, in drunkards, or very delicate persons, with an atonic state of stomach. To correct these, becomes highly important, since, by re-acting on the case, they occasion altogether a more serious state of things. Yet, while thus addressing palliatives, we are not to lose sight of the main design of eradicating the disease itself, or to forget that they are exhibited in subordination, and as auxiliary to the general treatment.

1. *Cardialgia.*—Among the affections to which I allude, is a *painful cardialgia*, or heart-burn, owing to acidity. The quantity of acid sometimes secreted or otherwise generated by the stomach, is very considerable, and its effects exceedingly afflicting. Besides heart-burn and cramps, I have known it to produce excoriation of the pharynx, the fauces, the tongue, the mouth, the lips, and corrosion of the teeth. Effects of this kind, in various degrees, are not uncommon, and in the late Dr. Poval, of

this city, they were to such an extent, that, with a total decomposition of his teeth so that the whole of them crumbled away, he had colliquative diarrhœa, probably from ulceration of the alimentary tube, ultimately died. The nature of the acid varies in different cases, though according to late chemical investigations, it appears most generally to be either the muriatic or lactic acid, and between which, there is no material difference. Effectual though it may be, at the time, it will not always do to resort to an emetic to remove it. We have happily, however, several other remedies, consisting mainly of the antacid and absorbent preparations. Calcined magnesia, in small and repeated doses, is much employed. The fixed and volatile alkalies, also, answer well, and are administered in different modes, and in the carbonated or pure states.*

Perhaps, however, the ammonia should not be very freely given where the muriatic acid prevails, as a muriate of ammonia might be formed, which is irritating in any considerable quantity. The testaceous articles, as the prepared chalk and oyster shell, which sometimes are the best correctives, may be objectionable for the same reasons. As a substitute, the ensuing mixture will answer.†

Many years ago, a domestic remedy acquired considerable repute, and which it still maintains. It is *ley*, made by pouring a gallon of hot water on a quart of clean hickory ashes, and half a pint of soot, digested for twenty-four hours. The cure of the late Professor Physick by it, after every other means had failed, brought it into general use, and subsequent trials confirmed its efficacy. It is to be taken soon after each meal, in the dose of an ounce diluted—at any other time it operating disagreeably, and with much less effect. But it is a harsh remedy, managed as it may be, and from its great popularity, is greatly abused by a too general and indiscriminate application.

Might not the nitrate of silver largely given, be useful? It has a great affinity for muriatic acid, and an inert compound might probably be formed. It is very much in this way that the alkalies operate.

Both the mineral and vegetable acids, such are the idiosyncrasies of disease, will sometimes succeed in these cases when the alkalies have failed. The elixir vitriol I have frequently known to do so, and lemon juice, as well as vinegar, occasionally. It affords me pleasure to find that, in part, this statement is supported by the celebrated Sir Matthew Baillie, of which I was not aware till recently. "Where acidity has been particularly prevalent in the stomach," says he, "I have sometimes found it more effectually corrected by the diluted mineral acids, than by alkalies. Ten or twelve drops of the diluted sulphuric or nitric acid, mixed with an infusion of some bitter, and taken twice a day, will sometimes be very beneficial to this condition of the stomach."‡

* The following formula I have mostly employed:—℞. Carbonas sodæ vel Carb. potass ʒj; Gum arab. ʒij; Sp. lavand. comp. ʒj; Tinct. theb. gtt. xx; Aq. font. ʒiv, M. More especially is the volatile alkali adapted to those instances where the stomach has lost its tone, as in drunkards or delicate women, and the ensuing prescription is a good one:—℞. Aq. ammon. ʒj; Magnes. calcin. ʒij; Aq. cinnam. ʒij; Aq. font. ʒvj, M.

† ℞ Liquor potassæ pura ʒj; Magnes. calc. ʒij; Aq. cinnam. ʒij; Aq. font. ʒvj, M. The dose of the preceding mixtures is about a tablespoonful, repeated *pro re nata.*

‡ Posthumous Writings.

Chewing blanched almonds, or a teaspoonful now and then of wheat bran, I have also found serviceable.

2. *Gastrodynia.*—The stomach may be thrown into painful cramps or spasms, denominated gastrodynia, often so violent as to call for immediate relief. Exactly of the same meaning is this term as gastralgia, each importing *stomach ache*, and are used by some of the late writers as equivalent. But they are applicable to very different conditions, which ought not to be confounded. The latter affection is a pure neuralgia, and characterized accordingly—while the former is more of a colic, occasioned by the acrimony of an immense accumulation of disordered secretions, which never exist in gastralgia. Not unfrequently it is met with in connection with cardialgia and pyrosis. The remedies in the paroxysm are opiates, ether or Hoffman's anodyne liquor, or musk, or the oil of valerian, or some other antispasmodic—of which, however, opium and its preparations are the best. Milk is sometimes very effectual, Two cases, especially have come under my notice, in which its utility was remarkably displayed, the spasms being more speedily and effectually relieved by a copious draft of milk, than by opiates or any other means.

Distending the stomach with tepid water is serviceable. Equally so is sipping small portions of boiling water—the one operating by relaxation, and the other by stimulation of the stomach. Not removed by the foregoing means, venesection may become necessary to relax the spasm, and afterwards topical bleeding, with a blister over the epigastrium.

To prevent a recurrence of an attack, the hiera picra, elixir proprietatis, Warner's cordial, the volatile tincture of guaiacum, and the sub-nitrate of bismuth, have been strongly advised in the interval of the paroxysms. The last is in great vogue, and I have reason to believe it merits confidence. An infusion of Peruvian bark has sometimes answered exceedingly well with me, to the use of which I was led by its known efficacy in the case of colicky or *belly-ache* infants, during the first months of existence. But the most certain remedy is the ley formerly mentioned—it scarcely ever having failed in my hands to eradicate the tendency to a renewal of an attack.

3. *Distressing flatulency*, from a copious disengagement of gas, fœtid or otherwise, very frequently exists, resulting either from fermentation of the ingesta, or a vitiated secretion of the vessels of the stomach—though when excessive, nearly always, the product of the latter source.

Carminatives may alleviate it, and to do away the disposition to its recurrence, I have seen much good from the elixir vitriol, repeated several times a day, alone, or with an infusion of bark. Where it follows speedily on eating, with a sense of load and oppression at the pit of the stomach, a pill of two grains of ipecacuanha, taken as soon as the meal is over, does sometimes obviate it.

The pill should be hard and dry, in which state it produces no nausea. Great relief is also derived, in some instances, from the annexed preparations,* though the one which follows is still better,† in the dose of half an ounce in a wineglass of hot water. But preferable to all these remedies

* ℞.—Pulv. rhei ʒjss., Sem. fœn. ʒj., Aq. bull. ℥iv. M.—et collat, adde—sacch. alb. ʒij. et mosch. q. s.

† ℞.—Rad. rhei contus. ℥iij., Sem. carui ʒss., Sp. arden. ℔ij. To digest for ten days.

are the dinner pills, one of which to be taken half an hour after each meal.*

4. *Pyrosis.*—As much does pyrosis or waterbrash call for attention, and which is a very curious affection, commonly imputed to a preternatural state of the pancreas, or morbid secretion of the stomach. It may perhaps proceed from the first, though more usually from the latter cause. The vessels subservient to the elaboration of gastric liquor, become disordered, and, in consequence, pour out this vitiated fluid to a very large amount. It is the latter form of it, with which we have chiefly to do at present. Where the discharge is very copious, the treatment may be commenced with an emetic, and a recurrence had to it occasionally, when a re-accumulation of the fluid takes place to a distressing degree. Emetics operate probably as much by changing the perverted action of the vessels of the stomach, as by the evacuation of its contents. There are, however, some other remedies after the stomach is thus prepared for their reception. The whole of the antacids such as limewater and milk, the alkalies, the cretacious preparations, are of this description.

No small share of confidence is also placed in opium. Cullen recommends it, who is so sparing of praise, that what he says of any medicine is entitled to great weight. Yet I have seen no more than palliation from it—and where spasm is connected with the affection, which often happens, it is always demanded. The kino, the acetate of lead, the oil of amber, the spirit of turpentine, and the subnitrate of bismuth are all important remedies, and may be successively tried, if necessary—the last of which, however, is usually the most efficient.

5. *Palpitations of the Heart.*—These on some occasions are extremely violent. They seem to be owing to a peculiar nervous sensibility of the stomach and heart, by which a slight impression from acid or any other irritant made on the one excites the irregular motions of the other organ.

Temporary relief is derived from the antacids, as formerly enumerated, and the antispasmodics, opium, ether, Hoffman's liquor, musk, natural or factitious, the oil of amber, the spirit of turpentine, and the essential oils.

6. *Affections of the Head.*—Cephalalgia spasmodica, or sick headache, one of the most heavy of the penalties entailed on the sedentary and studious, is primarily an affection of the stomach, owing to the irritation of morbid secretions. It recurs periodically, the pain is always frontal, and particularly over one or both eyes, and is preceded and accompanied by nausea, sour eructations, and other indications of imperfect digestion. The best remedies in the paroxsyms are emetics, magnesia, and the fixed and volatile alkalies. Not a little curious is it, that directly opposite means, as the vegetable acids, sometimes prove equally effectual. I have known a tablespoonful of vinegar at once to afford relief, and still oftener the same amount of lemon juice. Early in life I was tormented with the complaint, and the latter was my only remedy. Yet, where there is much vascular action, or great cerebral determination, we must resort to the loss of blood, generally or locally, and to a sinapism or blister to the nape of the neck. Drinking *hard cider*, every morning fasting, is a popular and very effec-

* ℞.—Gum mastic. Pulv. aloes, āā ʒi.; Ipecac. gr. x.; Ol. carui gr. x.; Mucil. gum arab. q. s. M. Ft. pill. xx.

tual preventive of this, and most other affections of the head proceeding from a dyspeptic state.*

Vertigo.—As regards vertigo, it seldom occurs except in the case of inebriates, and with them it is palliated by the carbonate of ammonia, or by assafœtida or garlick. Traced, however, to vascular fulness, bleeding and other evacuations will be proper.

Tenderness, &c. of the Scalp.—Externally, the head is liable to acute, and even excruciating pains, spasmodic or lancinating, attended sometimes by an exquisite tenderness of the scalp exceedingly enduring. Though this affection may not hitherto have arrested so much attention as to be accurately described, it has not altogether escaped notice. The plan of treatment pursued in this city, in some instances, after various other means had failed, was, to cut through the integuments, under a conviction that the case partakes of the nature of tic douloureux, and that, by dividing the affected nerve, a cure might be accomplished. What was the precise degree of success of the practice, I cannot say, though I suspect it afforded little encouragement, as I do not learn that it has lately been repeated.† Early adopting the notion that this affection, whatever might be its precise nature, arises from a dyspeptic condition of the stomach, the only cases of it which have come under my care, I managed chiefly by emetics, and had reason to be entirely pleased with the result. Even genuine neuralgia has been cured, in several instances, by this same practice, most probably when proceeding from gastric irritation.

5. *Diseases of the Eyes.*—By Richter, it is maintained that many of the diseases of the eyes, and particularly amaurosis, result occasionally from a disordered state of the chylopoietic viscera, and especially the stomach. Considering it primarily a gastric affection, he directs the exhibition of emetics, and afterwards a combination of tartarized antimony, with some other articles, to keep up a constant impression on the stomach. Doubtful as this hypothesis may seem on the first view, I am convinced of its correctness in many instances. The more we study the economy of the stomach, the more we shall be enlightened on general pathology, as well as to the diseases of the head. My practice has afforded me several cases of violent and intractable ophthalmia, that I could trace to a vitiated state of the stomach. Accumulations of bile in that viscus, have long been known distressingly to disorder the head, and affect the eyes, though the more painful and obstinate inflammations of these organs, have not hitherto, I believe, been ascribed to this cause. That it does occasionally produce them I am persuaded. Of this, at least, there is no doubt that they are speedily relieved by vomiting,

Hypochondria.—It is an ancient opinion, confirmed by subsequent experience, that hypochondriasm, sometimes exasperated even to furious mania, or depressed into the deepest melancholy, commences in depravations of the chylopoietic viscera, and above all—the stomach. But since, from its importance, it claims a more elaborate examination than I can now give it, I shall postpone the consideration of the subject to another

* By *hard cider* I mean a preparation of this liquor which we derive from New England. It is essentially different from *sour* cider, or any of the kinds in common use. These instead of relieving the affection have rather a contrary effect.

† The practice has been tried in England, and failed.—*Bendingfield's Medical Practice.*

place—and, for the same reason, that of hysteria, diabetes, calculus, and some other affections having their origin mainly in imperfect digestion.

In closing this part of the subject I have to remark that the preceding affections, and especially cardialgia, gastrodynia, pyrosis, palpitations, cephalalgia, tenderness and pain of the scalp, may originate in or be kept up by spinal irritation, or at all events, in many instances, that they are most effectually managed by local bleeding and counter irritation to the upper portion of the vertebral column—or they being, as also happens, more immediately confined to the ganglionic nerves, by the same means applied to the epigastrium. My wish, on the whole, is to inculcate the important fact, that though the series of medicines mentioned are very often of service on these occasions, they are, at most, only palliative, sometimes even aggravatory—and that, with the intention of a radical and complete cure, the other plan of treatment must sometimes claim a larger share of confidence.

Nevertheless, whether in its simplest form or thus complicated, dyspepsia may prove intractable to the means hitherto suggested. The disease, independent of any organic injury, seems to be so fixed and rivetted, as to require for its removal some more efficient process. Galvanism, with this view, has lately come forth with great force of authority in its favour, without, however, sufficient discrimination in the direction of it. Efficient at all, it is probably in those states of the disease only, proceeding from a great defect of enervation, it being held to be identical with the nervous influence, or the most efficient stimulus to it. But the trials I have witnessed of it, amounting to no inconsiderable number, were so little encouraging, that I have ceased to employ it.

Experience has taught me that, on the whole, in such instances, most will be accomplished by an alterative course of mercury, taking three or four grains of the blue pill every other night, and a gentle laxative the next morning—one of the very best of which, for the purpose, is a wineglassful of the mixture thus prepared.*

It may suffice to mention, that mercury seems primarily to operate here by changing the condition of the stomach, as well, perhaps, as that of the collatitious organs, on which their depravations depend. Further, let it be understood, that the secondary affections on which I have commented, are by no means uniform concomitants on the early stage of the disease, especially to such an extent as they have been represented by me, and that, as previously stated, seldom more than one or two of them are present in the same case, though I have seen the whole in succession, or variously combined.

* ℞. Infus. tarax. ℥iv; Extrac. tarax. ℥ij; Supercarb. sodæ, ℥ss; Tart. potass. ℥iij; Tinct. rhei, ℥iij, M.

(*To be continued.*)

REVIEWS.

ART. XII.—*Principles of the Theory and Practice of Medicine.* By MARSHALL HALL, M. D. F. R. S., L. and E., Lecturer on the Theory and Practice of Medicine, &c., &c. First American Edition, revised and much enlarged. By JACOB BIGELOW, M. D., Professor of Materia Medica in Harvard University; and OLIVER WENDELL HOLMES, M. D. Professor of Anatomy in Dartmouth College. Boston, 1839; pp. 724, 8vo.

THE improvements of science necessarily beget a demand for a renewal of the elementary treatises that teach it. Had our medical knowledge remained stationary, as it was in the time of Cullen, the "First Lines" of that distinguished man would hardly have been superseded to this day. Few men have since made a better use of all the knowledge of their time than he did. Few have observed disease more faithfully; few have more ably or with better judgment combined the observations of himself and others, into a connected system; and fewer still have taught a more skilful treatment of disease. Indeed, with all the additions to knowledge of later times, and with all the changes of theory, his work is even now but partially superseded. It is yet read, and must be read by every physician; to the advantage of the experienced reader, and to the no small embarrassment of the student in his earlier days of pupilage.

The student receives his first instructions chiefly from general treatises; and he receives them in the main implicitly, with little power of estimating the degree of confidence to be placed in them. If he is then taught erroneously, he is not only compelled to unlearn what has been impressed with the freshness of first lessons upon his mind, but he becomes confused by contradictory assertions and opinions before he can have learned to weigh them; and discouraged, if not disgusted, by the uncertainty of all that he learns.

At no former period have works of this sort so rapidly become obsolete as in our own times. We have seen, within a few years, not old theories abolished for new speculations to assume their places, as in former times, but the objects of inquiry in a great measure changed; not the discovery of new facts merely, but new modes of observation established, and new methods of attaining accuracy in our investigations. It matters little, in this point of view, if we allow that much of this is unreal and liable to be overthrown in its turn; or if we go farther and join in the cynical remark, that there is more of the love of change than real improvement in the innovations of the present day. It matters not, we say, for science must be learned by the pupil as it is taught by the master; and those who teach the first alphabet, must teach substantially the same language as he who comes after and fills up the course of instruction.

We have spoken of elementary books of medicine as the first book of the student. It is often much more than that; very many students, in this country at least, whatever it may be in others, scarcely get beyond it in

he whole course of their pupilage. And the reading of many practising hysicians, we apprehend, extends little further than an occasional reference o some favourite system of practice. If we may judge from the very xtensive sale of such works as Thomas's Practice, and Good's Study of Medicine, compared with the limited demand for the Researches of M. Louis, the excellent works of Dr. Abercrombie, and others of a similar character, we must infer that there exists in the profession a very moderate lesire to explore the original sources of medical knowledge compared with the readiness to avail themselves of the labours of compilers. This may not be very creditable to the learning of the profession, as a class of scientific men; and yet we fear it is a just representation of it.

The student of medicine must, indeed, as we have intimated, in most cases, begin with his *hand-book*. He must have an outline of the course before him, a general survey of the whole field of inquiry, before he is prepared for an advantageous investigation of particular subjects. But his studies need not end here. The three years of preparatory study required, so far as we know, with only one exception, in all our states, short as is the time for acquiring so much as is needed to be known, is yet sufficient for more than this. With only a tolerable amount of diligence he may have read and *studied* some of the best original treatises in all the departments of medical science, so as not only to have made himself acquainted with their facts and reasonings, but to have become familiar with their habits of observation and inquiry; in short, *have learned how to learn*. For a few years after he has assumed the style and consequence of a physician, he will have leisure, unless he be more fortunate than most men, for a still more advantageous pursuit of the same inquiries. And, in later life, amidst all the fatigues and responsibilities of a successful practice, the physician may yet find time for occasional glances at the labours of others, so as at least to keep himself informed of the state and progress of knowledge; if he do not, also, as he ought, furnish his own quota to help on that progress. In each stage he will occasionally find it convenient and useful to consult a well digested epitome of medicine to refresh his memory, of what he has before learned, or as an index to further researches; but if he confine himself to such reading his knowledge will be most superficial.

The first attribute of a good treatise on the principles and practice of medicine generally, should be its *correctness*. It should give a faithful view of what is *known* on the several subjects; a clear exposition of established facts and opinions, in contra-distinction from imperfect observations and speculative theories. Fulness must be sacrificed to accuracy. Better that there be many a gap in the train of unexplained phenomena than a single explanation resting upon a false assumption. In this point of view all attempts, which in times past have been so common, to present a complete system of medical knowledge, are full of evil.

We have alluded to the injury suffered by the student who begins his course of studies with learning antiquated or otherwise incorrect opinions. On this subject much more might be said. We have a vivid recollection of the impression made upon our own mind in the infancy of its acquisitions in medical learning, when in the retirement of a country village we were set to pour over the mechanical explanations in physiology of Haller and Boerhaave. The beautiful system of hydrostatic pressure through the invisible nervous tubes, swelling out the equally invisible cavities of the muscular fibres, to produce muscular contraction; with all the wonders of

the *error loci* in pathology; and then the dismay at finding, on reading th next book, that all this had long since been swept away by subsequent di coveries, (shall we say?) or speculations. The student who had fallen o the doctrines of a later period, the mysteries of the *spasm of the extrem* vessels of Hoffman and Cullen, would now be scarcely less bewildered. We do not forget that the works of all these great men contain much tha is of permanent value; that they ought to be read still by every student o medicine. But, as first books, how greatly do they mislead and discourag the pupil.

It is not easy to determine how far an elementary treatise should contain theoretical explanations of the phenomena it describes. Its firs object, doubtless, is with medical facts. But facts alone, without any connection by legitimate inferences, would form a confused mass of knowledge of little use to the student, who has no experience to enable him to draw inferences for himself. The true rule is simple enough in itself;—that no explanation should be allowed, that is not a rational deduction from the facts established. In actual practice, however, this rule is not so easily applied. Legitimate inferences and visionary speculations although so widely different in their general character, approach each other by such ill-defined limits, that men of different minds view them very differently. What to one man seems clearly established by irresistible evidence, is to another, of more rigid temperament, the merest hypothesis. Those writers who undertake to give a complete system of medicine, are especially liable to mistake hypothesis for true theory, conjecture for evidence, speculation for reasoning; and such have been many of our most noted writers on the principles of medicine. A like danger besets him who either is or thinks himself the author of any considerable discovery in medical knowledge. His mind must be well balanced indeed, if he do not see in his own discoveries a much greater importance than will be attached to them by others, even if he do not over-estimate the evidence upon which the supposed discoveries themselves rest.

In these points of view, the work now before us has been prepared under peculiarly favourable circumstances. Whatever of bias the original author may have been exposed to, in consequence of his claim to new discoveries, is fully counterbalanced by the practical good sense and judgment of the able editors, who are liable to no such unfavorable tendencies. Both of them are well known for their zeal and success in the cultivation of sound learning, and one as an able practitioner and teacher of medicine of many years standing. Being engaged in the business of instruction, their experience of the wants of pupils has induced them to undertake this work. It may fairly be presumed that the same experience will have operated constantly as a caution against admitting into it anything that is either unsound in doctrine or incorrect in practice—anything that must be unlearned before the pupil can make farther progress in knowledge.

Dr. Marshall Hall's *Principles of the Theory and Practice of Medicine* was designed primarily to accompany, as a sort of text-book, the author's lectures on the same subject; indeed, it has much the appearance of having formed originally a part of the lectures themselves. There is often a vivacity in the style, and occasionally an allusion to himself and his own personal matters, to which a man might be much more easily incited in the preparation for a viva voce address to listening sympathising pupils, than by thinking of the deliberate and perhaps criticising reading of the study. There are some great advantages in this; it gives life and animation, it

keeps up the attention and makes a vivid impression. There are also disadvantages. Notwithstanding the author's repeatedly expressed determination "not to write an unnecessary sentence, or even an unnecessary word," his fertility of language often runs into an exuberance of words, and his zealous advocacy of his claims to original opinions or observation, sometimes outstrips the necessities of students. On the other hand, the design of filling up a more full explanation in his lectures, has led him to omit much that requires a more ample elucidation in a treatise designed for general use. Some of the more important of these redundancies the American editors have omitted; and the additions which they have made are so numerous and extensive, as to constitute about one third part of the large volume now presented to us.

It adds somewhat to the vividness of the impression, though not always to the feeling of security that the impression is a correct one, that the author evidently writes in a strong confidence that he is saying the right thing, and in the right manner. For example, in speaking of melanosis he says, "I will devote to it precisely that degree of attention which it appears to deserve, comparatively with the other subjects of this volume." And again, of eruptive fevers: "I expect much will really be effected in simplifying the subject by the mode which I have adopted, of placing these arrangements before the student. The eye—the mind will speedily become familiarized with the multitude of events which occur, and then the principal difficulty will be overcome." [English edition.] Indications of the same self-complacency are not wanting in other parts of the work.

The style, besides being, as we have already intimated, diffuse, is often negligent. The author occasionally indulges in the coining of a new word, or in a new application, which is equivalent to it. Sometimes this seems to be done for no other reason than to spare himself the trouble of seeking a better expression; for example, "the *splenic* pain, tenderness and tumor." In other instances they are more expressive, and by using them considerable circumlocution is avoided. Possibly we ought to tolerate such words as *detectible* and *indetectible* for this reason, although the sound of them is by no means agreeable to our ears. Technical phrases are carefully defined by an explanation of their etymology.

The style of the editors is free from the declamatory character of the author's, and is altogether in better taste, although their familiarity with French medical literature has occasionally betrayed them into a foreign idiom. If, in consequence, it wants something of the spirit of the original, it loses nothing in perspicuity, and gains much in simplicity and comprehensiveness, and in *sincerity*. We feel none of the misgivings, which in the other case it is not easy wholly to repress, lest strict, severe accuracy should sometimes be sacrificed, or qualified, for the sake of rhetorical effect.

These, however, are minor points; in the main, the descriptions are clear and graphic. The interest of them is considerably enhanced by the frequent introduction of individual cases of disease, by way of illustration. This advantage is attended by some sacrifice of the brevity so studiously aimed at, and sometimes the illustration draws off the attention too far from the main subject. In the thorough investigation of a disease, individual cases cannot be too carefully studied; but in a mere outline, a too frequent introduction of them may be injurious. If the history is related with great brevity, it is liable to mislead; if more fully, it occupies so much space,

in a work where conciseness of description generally prevails, as to give the appearance of an undue importance to the diseases thus illustrated.

It is not indeed easy, perhaps not possible, for any author to attach to each disease, in his descriptions, precisely the relative degree of importance which truly belongs to them. Diseases which he has himself elucidated by original observations or separate treatises, will unavoidably *loom up* in his mind to a consequence which they do not possess in the view of others. Some traces of this appear in the work before us, even through all the *graduating* processes of the editors.

The descriptions in this volume are essentially aided by a great number of wood cuts, representing sometimes healthy, and oftener morbid appearances. This, so far as we know, is a new application of this cheap method of illustration. The illustrations are not very beautiful, nor remarkably well executed, either in the original or the American edition. They do not, and are not designed to (nor indeed can any engravings, however well executed) serve as a substitute for an actual examination of the parts themselves, both healthy and morbid. But they will give the student some idea of their appearance, before he has had opportunity to make such examinations; and what is of much more worth, they will help to recall the exact appearances to his memory in subsequent reflection.

The work is divided into two parts: *The Theory of Medicine* and *the Practice of Medicine.* Under the first head are discussed in so many chapters, *Medical Observations; The Signs or Symptoms of Disease; The Causes of Disease; Treatment of Disease; Inflammation; Tubercle; Scrofula; Melanosis; Encephalosis; Scirrhus; Fever; Irritation; Exhaustion; Sinking; Bloodletting; Mercury;* and *Tartrate of Antimony.* The first four chapters and that on Scrofula, are original in this edition. We see no very obvious reasons for just this division of the subject—why many of these subjects should be regarded as belonging to the *theory* of medicine, any more than many others which are assigned to the division of *practice.* The author remarks that a full view of this subject would involve the consideration of the anatomy, physiology and morbid anatomy of organs. The first and second of these he supposes to be learned elsewhere, and the last is associated with the account of individual diseases. Some of the subjects in the preceding list might with equal propriety, one would think, be assigned to other places. Mercury and antimony belong rather to the materia medica, except so far as their action is the cause of specific diseases; and then their place would seem to be in the second part rather than the first. The same might be said of melanosis and encephalosis, and perhaps of some of the other diseases enumerated in the first part. On the other hand, the influence of the nervous system upon disease in general is so great, that we should have thought its claims to notice in connection with the theory of medicine, at least as strong as those of tubercle or blood-letting, if not equal to those of inflammation or fever. We do not regard this as a very great fault. But if there is any justness in these remarks, they show that the author has at least been guilty of carelessness in the arrangement of his subjects, although he makes a considerable display of attention to order and method in regard to it.

Several of the subjects of this part certainly require to be discussed before the pupil can be prepared to enter upon the study of individual diseases. The first chapter is on *Medical Observation.* The difficulty

f acquiring a full knowledge of diseases is well described in the opening ections.

"1. The observation of phenomena occurring in the living body, whether in ealth or in disease, is attended with peculiar difficulties. These phenomena re the results of the mutual action of external influences and of living organs pon each other. The influences are extremely numerous, they are constantly hanging, and many of them imperfectly appreciable. The living system on which the act itself presents an assemblage of powers and susceptibilities, the extent and balance of which vary at every moment of life. A perfect history of any given case would require a complete exposition of all these external nfluences and all these internal changes. Still further, as the internal conditions of existence peculiar to an individual, or what is called the *constitution*, re, to a great extent, transmitted from his progenitors, a complete observation would require the knowledge of a thousand circumstances relating to those who have perished before the subject of our study existed."

"2. A perfect medical history is therefore an impossibility. It is in vain that he student turns to the most exhausting and insatiable of modern observers in he hope of discovering such a model; he may find valuable approximations, but never perfection. Were the patient placed in the balance of Sanctorius, were he surrounded with the instruments for measuring the density, the temperature, the moisture and the electrical state of the atmosphere; were every beat of his pulse registered; were he percussed by Piorry and ausculted by Laennec; were his intelligence ever so acute, and his questions ever so sagacious, still the account of his disease would be incomplete. And were he to die in spite of all this united wisdom, and were the scalpels and microscopes of all the Louis, the Kiernans and the Ehrenbergs in the world to unite in the investigation of his organs, the autospy would be imperfect."

"3. Since, then, the most complete observation of a case is only an approximation to its real history; and, since, of the apparent facts which we may extort, some may be open to doubt, and others so far trivial as to lead to little or nothing. A sound and discriminating judgment must preside over our inquiries. The student must not imagine that by means of a table of questions he can sit down by his patient and draw up a perfect record. If even in mathematical investigations we see the mind of the philosopher shine through his rigid formulæ, how much more will the individual qualities of the observer be apparent amidst the refracting media through which medical truths are discerned. A table of questions may be useful in assisting the memory and in giving a degree of uniformity to our histories of disease, but the act of observation is not, and never can be, reduced to a purely mechanical process." pp. 3, 4.

The different methods employed in medicine of arriving at truth are arranged in three classes: *Personal observation—the study of recorded cases*, and the *numerical analysis of recorded cases*. Observation is, of course, the basis of all medical knowledge. But observation alone only presents us with detached facts. To deduce principles from these facts, they must be examined and compared in their manifold relations. Shall this be done in our own minds as we recall to memory the phenomena occurring under our personal observation? Or shall we apply the same power of recollection to the facts recorded by others, and thus draw our principles from the impression which this recollection has made on our minds? Or, lastly, shall we classify our facts, whether observed and recorded by ourselves or others, according to their more important relations, and enumerate their several coincidences and discrepancies? The numerical system, it should be remembered, relates not to the original observation of the phenomena themselves, but to the use that is made of them in deducing conclusions from them. It is from mistaking or overlooking this

truth that much of the prejudice against this method has arisen. Counting, it is said, is but a mechanical process, while the phenomena of matter and disease are far otherwise. But in truth this process is not applied until by a rigid observation the facts are ascertained and properly subjected to mechanical, or rather to mathematical laws.

This method of analysis is of course liable to abuse as well as others. Facts may be assumed on insufficient authority. As in regard to circumstantial evidence in law, the circumstances must be proved, from which guilt is inferred, so here the facts must be established as true, before they can rightly be enumerated. Doubtful phenomena can lead to none but doubtful results. But in what other way can we even with well ascertained phenomena obtain sure and certain results?

Men of ardent temperament too, may draw conclusions from an insufficient number of observations. But this evil exposes itself to immediate correction. The enumeration exhibits not only the degree of constancy of particular phenomena, but the number and the completeness of the observations, thus presenting at once to the eye, the evidence of the weight of authority to which they are entitled. So far, therefore, from becoming a substitute to careful observation, the practice of enumeration is the greatest stimulus to it; because it exhibits more fully than any other mode of inquiry the deficiency of imperfect records.

"19. If the habit of recording cases rather improves than injures that of observation, the habit of analysing them exercises a still more beneficial influence. In the tables of the analyst every omission, though but in a single case of his series, becomes instantly obvious, and detracts from the completeness of his results. Take the cases given by Morgagni, by Laennec, by Andral, at least in the first four volumes of the Clinique Medicale, and submit them to analysis, and you will find your tables looking like a chess-board towards the end of the game, a statement here and an omission there, straggling facts and blank spaces. Indirectly, then, the numerical school has improved the observers whom it has taught to analyse, and through their example has raised the general standard of observation." p. 10.

The chapter under consideration gives a brief explanation of the leading circumstances which should be embraced in a complete history of a case of disease, and then presents the whole subject in a tabular view. It is not pretended that this can be entirely carried out in every case; perhaps not to its fullest extent in any. But by having it strongly impressed on the mind of the pupil and of the physician at the outset, what it is desirable that the history should accomplish, it may be hoped that some approach to such a history may be obtained. The filling up of particulars must be greatly modified by the peculiar circumstances of each case, as well as by the capacities and the opportunity to exercise them, both of the patient and the physician.

The number of those who will actually make observations for the benefit of others is small compared with the number of the whole profession. But the value of these instructions is not limited to them. Something like the same process of investigation is necessary in every case of disease, to enable the physician to acquire a sufficient knowledge of its character to fit him to prescribe for it. On this point instruction is greatly needed. Pupils enter upon the study of medicine, and it is to be feared, oftener upon its practice too, without any definite idea of the means by which they are to obtain a knowledge of the disease presented to their notice. How

often do we see physicians ask a few questions, almost at random, or trust to a doubtful and uncertain tact, to ascertain the nature of a complaint, instead of making an intelligent series of inquiries. A true tact will indeed do much; but it is by guiding the physician in his inquiries, and in obtaining significant answers, not as a substitute for investigation.

To the mass of people out of the profession, the whole matter is a mystery; and it is to this circumstance, perhaps, more than to any other, that the public at large are so little able or disposed to discriminate between the intelligent physician and the empiric. The process of investigation is equally hidden in either case, and there is but little reliance upon the general character of either to distinguish between them. Not unfrequently medical men increase the difficulty by an unnecessary display of mystery, as if the respect for their wisdom was in proportion to the degree in which it is concealed. The opposite is unquestionably true. It may well be doubted whether any scheme can be devised for the suppression or discouragement of quackery, so effectual, as for the legitimate members of the profession to improve their own knowledge, and exhibit it fairly in a full and patient inquiry into the phenomena of the diseases presented to them. If this is done plainly, in the simple desire to ascertain the truth for the benefit of the patient, it presents a far better view of the real intelligence of the physician, than he would be able to exhibit by any direct attempts to display his knowledge; and in due course of time, if not at once, his intelligence will be appreciated.

The means of ascertaining the existence and character of diseases are presented in a somewhat different point of view in the next chapter, on the *Signs or Symptoms of Disease.* Symptoms are divided into the *rational* and the *physical* signs. Under the head of the latter we have a concise, but very clear explanation of the phenomena observed in auscultation and percussion. One of the greatest obstacles to the earlier adoption of these methods of exploration by the profession generally, has been the great number of new terms with which their first introduction was encumbered; many of them in a foreign language, and therefore, however significant in themselves, not at all so to the minds of those who were not familiar with that language.

Our volatile neighbours on the other continent have such lively imaginations, that they often affix designations from a comparison with objects, to which our more sluggish fancies can discover only a faint resemblance. The greater difficulty is, that they are in a foreign tongue. Some of our young men return from abroad so laden with the wisdom of the old world, that they are unable to express their knowledge but in a barbarous mixture of divers languages. The better and the larger portion of them have become so accustomed to receive instruction on these subjects in another language, and have so associated the instruction they received abroad with the terms as well as the manner of the teacher, that they almost unconsciously continue to use their foreign idiom when speaking of these subjects at home. Our earlier treatises on auscultation were all translations from the French, and most of the later have been little more than imitations. The translators seem, in many instances, to have found it easier to adopt the original term applied by their authors to each separate phenomenon described, than to apply a corresponding one in our own language. Thus it happened that these new terms, a considerable number of which were from the very nature of the case unavoidable, instead of being, as in

the original, descriptive and therefore easily understood and remembered, became to English readers not only arbitrary, but in a sense barbarous. If it be said that physicians should be expected to know enough of the French language to understand their meaning, it may be answered that there would, in that case, be no occasion for a translation.

We would not carry our requirement of a translation so far as to the interpretation of proper names, as the French themselves are said to have done, in the times when honest Mr. Flint in the story, by a double translation became Pierre de Fusil in France and returned Peter Gunn. But terms of art or science, which derive all their appropriateness from their significancy, ought surely to be translated whenever there is a corresponding term in our own language equally applicable and significant. Why should the English reader be required to stretch his organs into a vain attempt to say *bruit de frottement*, or to pucker them into *bruit de soufflet*, while we have *friction* sound for the one, and good old Anglo-Saxon *bellows* sound, or, if you prefer it, a *puff* for the other? In some few instances the original term is so bad in itself, that it is quite desirable that a substitute should be applied. *Bruit de diable*, for example, is derived from an instrument so trivial as not to be known out of France. It conveys no meaning, certainly no appropriate meaning, to our minds, in the original language, and translation cannot help it. A *devilish noise*, besides the more than questionable propriety and decorum of the phrase, is not very distinctive.

We have been led to these remarks, not by the prevalence of the fault, on which we have commented, in the chapter under review, but by its unusual freedom from it. We know not where else so clear and intelligible an exposition of auscultation and percussion can be found. It is short and does not go into all the minute details, for its object is to be elementary. As an introduction to this branch of study for the pupil, it is excellent. It will be hardly less valuable to the practitioner who has already studied the subject in more elaborate works, to refresh his memory in long intervals of practice.

It is the fault of most works of this kind, that in their treatment of diseases too great a variety of remedies are recommended, and recommended too confidently. Every disease has its specified method of cure, often described with so much detail that the particular medicines to be given and the mode of administering them are pointed out. The novice has but to find out the name of his disease, and to look in his book for its appropriate remedy; and this, too, with little or no intimation that in a vast proportion of cases no remedy whatever will be of any avail towards the effectual cure of the disease. This work, as its title professes, confines itself strictly to the *principles* which should govern the physician in his treatment. In the histories of individual diseases it gives no specific directions for particular formularies of medicines, but points out the character of the disease and that of the treatment suited to it, leaving it to the reader's own skill to apply the principles to the case before him.

Care is taken, also, to attach no more than their due importance to the action of medicines. In the introductory chapter on the *Treatment of Diseases*, the editors remark:

"337. Opportunities for doing good in medicine are not limited to the effect of specific remedies, nor to the application of drugs and instruments. The enlightened physician surveys the whole ground of a patient's case, and looks for

the presence of any deleterious agents and unremoved causes of disease. Many morbid affections, which have resisted powerful remedies, cease speedily on the removal of their sustaining cause. A child is often sick from an error in the diet or habits of the nurse or mother. An individual frequently suffers from the quality and quantity of his habitual food or drink, or of his exercise, air, occupation and clothing. A patient dies of phthisis, under the influence of a damp northern climate, who might have enjoyed long life in a southern; and on the other hand, men fall victims to a fever and ague at the south or west, who would have escaped from disease by a timely removal to the north. It is as necessary, in many cases, that the physician should inquire into the situation, diet, habits and occupation of the patient, as that he should feel his pulse or explore his chest; and it often happens that the state of the one cannot be corrected, until the others have been previously set right."—p. 87.

Diseases are divided, with regard to their duration, issue, and susceptibility of relief, into *curable*, self-limited, and incurable. The first and last of these classes are plainly enough indicated by the terms applied to them. "In the second class, or that of *self-limited diseases*, it is intended to include those which receive limits from their own nature, and not from foreign influences; and which, after they have obtained foothold in the system, cannot, in the present state of our knowledge, be eradicated or abridged by art, but to which there is due a certain succession of processes, to be completed in a certain time; which time and processes may vary with the constitution and condition of the patient, but are not known to be shortened, or greatly changed by medical treatment."—p. 89.

The views of the editors, on this subject, have been more fully developed by Dr. Bigelow, in his discourse read before the Massachusetts Medical Society, in 1835, and published at that time.* These views are of great practical importance in the management of diseases. If it be true that certain diseases must go through a certain course in spite of every effort of the physician to cut them short, then it is obvious that such efforts are not only useless, but are liable to be highly injurious. In regard both to self-limited and to incurable diseases, the attention of the physician is directed to a wrong object, because an impracticable one, while he is attempting by active treatment to cut them short, or break them up, as the phrase is. It is not the least evil, that his labour is lost. Much direct suffering and injury are the immediate effect, and the patient is deprived of all that great amount of alleviation of suffering which a palliative course might in most cases produce. How often do cases of fever, which were mild in their beginning, become suddenly aggravated after the operation of exhausting remedies that were designed to destroy them? How many consumptive patients have made a more painful and more rapid, and no less certain, progress to the grave, in consequence of the bleedings, and the vomitings, by which their physicians have vainly hoped to cure them!

He who considers how large a portion of the ills of life, of every kind, has to be borne as best we may; to be assuaged and relieved rather than to be cast off, will not esteem the office of the physician unworthy of his best powers because much of his care must be directed to the palliation rather than to the cure of diseases. Better, surely, to be content with the mitigation of evils that cannot be removed, than by attempting what is beyond our powers, to put in jeopardy the good we might be able to accomplish.

* See the No. of this Journal for November, 1835, p. 148.

"361. The importance and usefulness of the medical profession, instead o being diminished, will always be elevated exactly in proportion as it understand itself, weighs justly its own powers, and professes simply what it can accom plish. It is no derogation from the importance of our art, that we cannot alway control the events of life and death, or even of health and sickness. The incom petency which we feel, in this respect, is shared by almost every man upo whom the great responsibilities of society are devolved. The statesman cannc control the destinies of nations, nor the military commander the event of battles The most eloquent pleader may fail to convince the judgment of his hearers, an the most skilful pilot may not be able to weather the storm. Yet it is not th less necessary, that responsible men should study deeply and understandingl the science of their respective vocations. It is not the less important, for th sake of those whose safety is, and always will be, committed to their charge that they should look with unbiassed judgment upon the necessary result o unavoidable causes. And while an earnest and inquiring solicitude shoul always be kept alive, in regard to the improvement of professional knowledge, i should never be forgotten, that knowledge has for its only just and lasting foundation, a rigid, impartial, and inflexible requisition of the truth."—p. 97.

The first chapter of the original work, the fifth of the American edition is on Inflammation, and contains a succinct, but, on the whole, an able and clear exposition of the leading phenomena of that important process. It is not, however, altogether free from the fault, to which we have before alluded, of giving a more than equal proportion of attention to some favourite point, in comparison with others of greater intrinsic consequence. Under the head of *Inflammation as a curative means*, he finds room for a detailed account of Dupuytren's method of curing artificial anus, with two diagrams; of the operations for prolapsus uteri by incisions in the vagina, and of nævus by puncture, with three representations, the two last of which, he claims to have first suggested himself. These details are not without their importance in themselves, but they seem a little out of place in an epitome so concise, as that less than a single page is devoted to a consideration of the constitutional symptoms of inflammation.

In speaking of the question whether, in the human subject, parts once entirely separated from the system can ever be reunited by organization with true vascular connections, both the author and the editors appear to have overlooked the cases, reported by Dr. Balfour of Edinburgh, of a perfect reunion of considerable portions of the finger, after having been completely separated. Dr. H. repeats, not very accurately, the old story of the nose that was bitten off and grew on again, but expresses a doubt whether there was a vascular union; and adds a case in which the tip of the finger was cut off, and being reapplied, adhered. It remained without sensation but was apparently vascular. The editors relate a similar case. In Dr. Balfour's case more than an inch of the index finger was cut off, and several minutes passed before it was re-applied. It adhered, and "recovered both heat and sensation."* In that of one of his correspondents, "the finger had been off an hour and a half before the dressing, and yet the union was so far effected in a week, that pulsation was distinctly felt at the end of the finger,"† and in that of another the thumb of the right hand was cut off close to the joint with the metacarpal bone, and was replaced after about eight minutes. The union was so perfect, that six months after, the attending surgeon reported that "the man has been working for some months past enjoying all the advantages of his thumb,

* Edinburgh Med. and Surg. Journ. vol. x. p. 429. † Ibid. vol. xi. p. 317.

only the motion of the joint is impaired." The patient attested the correctness of the statement by signing it with the hand that suffered the injury.* We have ourselves more than once seen a considerable portion of the finger unite, with an entire restoration of all its functions, after a separation so nearly complete that it was scarcely conceivable that the small portion of the skin which remained could have had any considerable influence in preserving its vitality. Dr. Balfour believes so fully in the power of perfect reunion as to propose, that in the operation for the renewal of lost parts, the portion to be inserted should be taken from any part of the body where it can best be spared, believing that the small strip of skin that preserves the union, in the common mode of operating, is of no importance to the successful result. This would, certainly, at times, be a much more convenient method. A man who should have lost that important ornament, the nose, has only to purchase a fragment from some neighbour, who is blessed with a superfluity. The surgeon is saved the difficult task of shaping so refractory an organ; and the patient is spared the perpetual labor of daily shaving it, as is said to have been sometimes necessary in the ordinary way of manufacture, where the material has been taken too much from the hairy scalp.

The chapter on bloodletting furnishes another striking example of the author's proneness to dilate on a favourite topic. An explanation of the effects of bloodletting in modifying the character of diseases, or of its influence as a remedy, might well have a place in a treatise on the principles of medicine; of the practice, at least, if not of the theory. But this is neither the one nor the other. It is merely an assertion and explanation of his rule for determining the propriety and extent of bloodletting, which is more fully developed in his "Researches on Bloodletting." The method, as most of our readers doubtless know, is to place the patient in an upright posture and bleed him to incipient faintness. "I would propose," says Dr. H., "that, in every case in which full bloodletting is to be instituted, the patient be placed perfectly erect in a chair, or in bed, and bled to the very first appearance of deliquium." p. 206. If much blood is lost before faintness begins, the patient required it and will be benefitted by the operation; if, on the other hand he faints with the loss of a little, he should not be bled at all. This might seem a little like the rule for trying a witch. If she swims she is a witch and must be burned, if she sinks she may be drowned, indeed, but she is no witch. Dr. H. says there is no danger because "the remedy is at hand." The fainting patient may be revived; the drowning witch (who is "no witch") may be dragged out. But whether either would come off quite scatheless, is a question.

The author regards this method as affording

> "1. A rule for bloodletting, in all cases in which this measure is required to be fully instituted. 2. A guard at once against inefficient and undue bloodletting; and 3. A source of diagnosis."—p. 205.

Upon the strength of this single *principle?* he frames a classification of diseases, and arranges them in a table: "I. Augmented Tolerance," "II. Healthy Tolerance," "III. Diminished Tolerance"—beginning with congestion of the brain which *tolerates* the loss of XL or L ounces of blood, down to the cholera which *tolerates* no more than VI ounces. How simple is the practice of medicine! The whole application of one of

* Edinburgh Med. and Surg. Journ. vol. xi. 452.

the most active, and, in some cases, one of the most valuable, of all our remedies, is now reduced to so simple a rule that "he who runs may read," and he who can use a lancet may practice it. Alas, that every rule will have its exceptions; and every practice, however excellent, will be met with objections. The author candidly states them, and the latter he easily obviates. "It seems," he says, "almost needless to allude to the case of early syncope from *timidity*. It is only necessary to arrest the flow of blood, to lay the patient recumbent, and to wait until his timidity has subsided." p. 208. Aye, but how is "the young practitioner" to distinguish faintness from timidity, from intolerance, from the nature of the disease?

"Two objections," adds our author, that just mentioned being too trivial to be regarded seriously as an objection, "have been made in reference to this rule for the administration of bloodletting; the first is that in some cases, not inflammatory, more blood might be taken than the patient could bear to lose, in order to institute the test; my reply is, that such cases are not *included* in my proposition, which only relates to cases in which bloodletting *is required to be* FULLY *instituted.*"*—p. 208.

We must, then, after all, find out some other means of determining whether it is safe to apply this universal rule. The test itself requires a test. The editors, in an additional section, express their dissent from many of the positions in this chapter. "The practical application of the rule," they say, "is by no means free from difficulties." The rule is intended to apply only to cases "in which bloodletting is required to be fully instituted." But it may be asked, how are we to know these cases? Either by the author's test or not. If we apply the test to discover them, we may do mischief by bleeding when we should not. If we can find them out without the test, then the test is superfluous." p. 212.

Two previous chapters on "Irritation," and on "Exhaustion," are but appendages to this on bloodletting, notwithstanding their precedence of it in the book. The subject of irritation is not treated of generally; but a particular case is selected in order to show that the phenomena produced by it, may be distinguished from those of inflammation, which they imitate, by means of the bloodletting test. *Exhaustion* from loss of blood, only, is spoken of in the chapter on that subject; and here, the most prominent object of remark, is the reaction after excessive loss of blood, which occasionally imitates the appearance of inflammatory action to such a degree, in the author's opinion, as not unfrequently to have led to most injurious repetitions of the bleeding. We doubt not that where copious bloodletting is freely practised by physicians there may be some occasion for the author's solicitude to produce a right impression on this subject. But we cannot but express our surprise that any man of the least practical experience in medicine, should be so led away by a hobby, as to think of enforcing such a rule of practice for an object like this; or indeed for any object that the nature of the case will admit of. "In *every* case in which full bloodletting," &c., let the patient be placed perfectly upright. Did he never see a case of inflammation, of the chest or peritoneum, in which every motion was agonising? And must the patient be bolted upright in his agony, because the physician has no other means of knowing whether this be really inflammation; or, if it be inflammation, in the idle fear that he may take a few ounces too much or too little of blood? As if there were no other means of estimating the effects of the loss of blood on the system;

* The Italics and capitals are so in the original.

as if the state of the pulse, the countenance, the respiration, the general aspect, were nothing.

There is an intermediate chapter on Sinking which quite redeems us from our indignation, and brings us back to our former complacency with our author. The unwary physician, and too often the most wary will meet the same disappointment, not unfrequently finds his favourable prognosis belied by a sudden and apparently almost or quite causeless sinking away of all the powers of life, which in most cases nothing will relieve. There is nothing perhaps which so severely exposes the confidence of the patient's friends in his physician, for to the patient there is soon no place for either confidence or distrust, as an unexpected occurrence of this sort. In some cases no degree of watchfulness or sagacity may enable him to descry the approaching danger. Sometimes he may do it, and perhaps anticipate and prevent it. At all events there is great advantage in his being fully warned, as here he is faithfully. He may at least be on the look out, and thus be the first to perceive the approach of evil; and if his previous prognosis has not been too confident he may save his own reputation harmless, even when he fails to benefit his patient.

Fevers Dr. Hall divides into three classes, Synochus, Typhus, and Intermittent. By *Synochus* he does not mean the disease so designated by Dr. Cullen, but "the *common* fever of this climate [Great Britain], as it arises from ordinary causes. It was used in this sense by the late Dr. Willan, and some term distinctive of such a form of fever from typhus is essentially necessary to the inquiry into the nature of fevers. It is that form of fever which is most frequently seen in private practice, amongst the middle and higher ranks of society; it is comparatively rare in hospitals." p. 232. There are weighty objections to this use of the term. If the introduction of new names for diseases is a serious inconvenience, the application of a term long in use to a new form of a disease is not only much more so, but is also extremely liable to lead to misapprehension and mistake. The division itself is to our minds of more than questionable validity. Especially in this country of republican equality, we greatly doubt if the diseases of the "middle and higher ranks of society" are so different from those found in hospitals as to demand a distinct term to designate them. We see nothing in the author's description of the disease to mark very clearly its peculiarities, as compared with other forms of fever; except indeed its aristocratic preference for certain "ranks of society."

The American editors, instead of confining themselves to Dr. Hall's division, extend the number to eight, viz: 1. Synochus; 2. Typhoid Fever or Dothinenteritis; 3. Typhus; 4. Intermittent Fever; 5. Remittent Fever; 6. Yellow Fever; 7. Congestive Fever, Spotted Fever, &c.; 8. Plague. The editors have omitted the original section on typhus, which was intended by the author to embrace all continued fevers not included under the preceding term of synochus, and have substituted two others, on typhoid fever, and on typhus. These sections give a lucid summary of the results of the latest published observations on these subjects, with figured illustrations of the morbid anatomy. These illustrations are copied from the original edition, although the designation of the disease to which they belong is changed.

Objections have been urged against attempting, in the present state of our knowledge of fevers, to establish a distinction between typhoid fever and typhus. It is by no means proved that they are essentially different

diseases. They may be mere varieties of the same disease modified by the various circumstances which are known to influence diseases in other cases, as climate, season, and epidemic influences. The distinction too, it is said, is founded not upon a difference of the symptoms observed during life, but upon the character of the anatomical changes ascertained after death.

But it is sufficiently well established that there are very important differences in the phenomena and effects of the great majority of cases of the fevers that have prevailed in Great Britain within the last five years, and those of the European continent, more especially as observed in Paris, and those of New England. The fevers of New England agree remarkably with those of Paris, and differ greatly from those of Great Britain. The same differences have been observed on a smaller scale, in different cases occurring at the same place, particularly in Philadelphia, where the discrimination between the two forms of fever has been carefully made by Dr. Gerhard.* In the strongly marked cases the two forms of disease are so unlike as to be readily distinguished. In other cases they approximate so that they can only be known from each other by the appearances ascertained after death.

It matters little, in reference to the propriety of this division, whether we consider these differences as constituting essentially distinct diseases, or merely as varieties of the same disease. In either case, the difference of phenomena remains, and must constantly be borne in mind in order to understand the true character of the disease. It is certainly more simple to express these distinctions by a separate designation applied to each class of phenomena, than to preserve one term for both classes, and distinguish them by additional appellations, or by descriptive circumlocution. The chief evil arises from attaching too much importance to a name. We have not yet gotten wholly rid of the effects of the attempts to render nosology a matter of natural history, as if diseases assumed and preserved a fixed character capable of being defined and reduced to system like the objects which engage the attention of the naturalist. In reference to such a system, a full specific difference of character must be established before a new specific appellation can be allowed. But in the view that we take of diseases, any important distinction that must be known and remembered in order to understand the character of the disease, may be good ground for a distinctive term. There is need surely of a sound judgment in the application, and especially in the selection of such new terms. We could have wished that a better selection had been made in this instance. All that is essentially important is that so clear a description should accompany every new designation, that no false impression should be made by it, and no unfounded association be attached to it.

It is remarkable that the original author should have passed over without notice such important diseases as remittent fever, yellow fever, and plague. The deficiency is supplied by the editors.† We cannot, however, go into a particular examination of these sections; nor indeed of the remaining

* See this Journal for February, 1837, p. 289, and August, 1837, p. 289.

† In the history of yellow fever on page 274, there is an error in the statement of the case of the ship Two Brothers, in which that disease arose in Boston in 1819. The crew of the vessel were not affected by the disease after her arrival, although many other persons were. The case affords a striking illustration of the influence of a gradual exposure to an active poison in diminishing the susceptibility of the system to its injurious effects.

portions of the work. If we were to extend our comments upon all the topics discussed in the ample volume before us as freely as we have upon some of those which we have noticed, our review would hardly fall short of a volume of equal dimensions. We have said enough to give an idea of some of its peculiar features, and, we trust, enough to express our high opinion of its general value as an eminently useful practical treatise. The notice we have taken of some of the author's favourite positions may possibly have given an impression that the work as a whole is strongly tinctured by his speculative views. Such an impression would be highly unjust. Taken in connection with the corrections and additions of the editors we scarcely know any work, of such extent, that has so little that is merely speculative, or so much that is practically useful.

The descriptions of diseases, numerous and concise as they necessarily are, are remarkable for the vivid impression they present of the disease in question, as exhibited in its actual phenomena. There is little of theoretical discussion; much of historical information, and of a practical exhibition of facts and observations. The treatment too is free from that overloading of remedies, with which most similar treatises are burdened. Although we have already said so much on this subject, we cannot forbear to extract the following excellent remarks of the editors on the false estimate too often made of the efficacy of remedies. After speaking of the conflicting testimony in favour of opposite modes of treatment of yellow fever, they add:

"To us it appears that the principal cause of these contradictions is to be found in the disease itself, and not in the treatment. The poisonous miasm of yellow fever, like the unknown cause of cholera, acts with different intensity in different seasons and places; it is generated slowly or rapidly, in greater or less quantity, with more or less active qualities. It may moreover have to act upon a mass of population very differently predisposed, in different years and seasons. Nevertheless, we are constantly meeting, in the history of fatal epidemics, with the same false confidence, the same discrepancies which we find in that of the disease in question. To assume that nature cannot form a poison more active than any remedy; to select a fortunate series of cases and attribute all the results to treatment; to find some specious reason for every instance of failure; to frame a triumphant formula which the next breath of the pestilence will sweep away—such has been too often the course of those who have usurped the place of true observers. The first question asked by the surgeon of those who have been wounded in action, is, what is the nature and extent of the injuries received? But the degree of activity of a destructive miasm, which instead of inflicting a palpable mechanical injury, has mingled itself with the circulating fluids, and shows its intensity in the symptoms which follow, is thought an insignificant element in the history of a series of cases to which the name of a disease has been assigned, and all the important effects are attributed to the loss of a few pounds of blood, or the exhibition of a few drugs and potions. As well might the surgeon forget to tell us whether his patients were shot through the brain or through the biceps, and confine his account to the nature of his dressings." p. 279.

The author in his preface, as is the wont of authors, modestly states his object to be the benefit of "the medical student, and the young practitioner." To such the work, especially in its American dress, is, as we have said, eminently calculated to be useful. Nor is its usefulness by any means limited to them. There are many physicians of riper years, whose reading has not kept pace with the rapid progress of professional improvement and change, and who have little leisure or opportunity to go through

the details of recent observations. We know not where else they will find so good a summary of the best medical knowledge of the present day; exhibiting in general, able and correct views of the most important results of recent investigations in all the varieties of disease to which man is subject.

We have spoken of this work chiefly as we find it in the volume before us. We have purposely avoided any question that might arise between the author and the editors in regard to the liberties they have taken with his production. It is sufficiently apparent from what we have said that our highest estimate of value is attached to those parts which are original in this edition. There may possibly be some partial judgment in this opinion arising from our personal knowledge of the ability of the editors for such a work. But we believe it to arise much more from the evidence they have furnished of their ability in the work itself. Having no peculiar hypotheses to support, and no new discoveries of their own to vaunt, they were free from some of the temptations which beset the author. Being practical men, and men of practice withal, their good judgment has enabled them to overrule some of his extravagancies and correct some of his errors. We think they would have made a still better book, if they had done this more freely; but we doubt not they were restrained by a consideration of the respect due from an editor to his author.

The mechanical execution of the work is not very elegant. As a work for students, those who have had experience of the treatment which books ordinarily receive at their hands, will not regard this as a matter of much consequence. But for the table or shelves of the physician's library a better style of printing is truly desirable. The Boston press has furnished us with some very good specimens of medical printing. The translations of Louis on typhoid fever and on phthisis, Warren on tumours, and still more the recent translation of Louis on yellow fever are issued in a style highly creditable to the taste and liberality of their publishers.

It is even said, indeed, that these publications have not been met by a corresponding liberality on the part of physicians, and that cheapness is a much more sure guaranty for the sale of a work, than excellence. If it be so to the full extent, the publishers of course are not to be blamed for conforming to the miserable taste of their patrons. But we blush for the profession, if their niggardliness is such as to be a just apology for all the diminutive type, coarse paper, scanty margin, and sheep-skin covers in which our medical books are generally supplied. E. H.

ART. XIII.—*A Treatise on the Diseases of Infants, founded on recent Clinical Observations and Investigations in Pathological Anatomy, made at the Hospice des Enfans-Trouvés: with a Dissertation on the Viability of the Child.*—By C. M. BILLARD, M. D., &c., &c., with notes by DR. OLLIVIER, of Angers. Translated from the third French edition, with an appendix by JAMES STEWART, M. D. New York, George Adlard, 1839, 8vo., pp. 620.

As this work of M. Billard is generally acknowledged to be one of the most important on the subject of which it treats, of any that have hitherto

been published, we believe we shall not do an unacceptable service to the profession, by giving a condensed analysis of its contents. The chief object of the work is to exhibit the peculiar character of infantile diseases, and to consider them in relation to the alterations which the organs have undergone. Each system, accordingly, is passed successively in review, and the varieties of form and appearance of every organ, are presented, with reference to its healthy, abnormal and pathological condition, and then deducing the treatment, after the symptoms and the nature of the anatomical lesions are duly considered. This opens, as it were, a new field, one which has not hitherto received the attention of any who have occupied themselves in the investigations of pathological truths. M. Billard shows very clearly, that while each texture possesses, equally with its particular species of vitality, its own peculiar diseased action, the period of life, also, exercises an important influence in the development of morbid affections.

The author has enjoyed a rare opportunity of pursuing his investigations in relation to the diseases of children, in the Hospice des Enfans Trouvés, in Paris; and the present work furnishes ample proof that these advantages have been abundantly improved.

Part first treats *of the Phenomena which are presented on examining externally the condition of the Child.*—A knowledge of these in the healthy state is deemed essential, as it enables us to appreciate the modifications they undergo in disease. On this account they become important marks of comparison.

Attitudes of the Child.—The flexed position of the limbs, and the forward curvature of the trunk, constitute the peculiar position of a newly born infant. The different periods at which an infant assumes new attitudes, vary according to the degrees of muscular strength. M. B. believes that the muscular contractions which determine the attitudes of an infant, are under the influence of the will, and thus become evidences of the activity of the sensorial power, and that the brain has commenced the exercise of the powers to which it is destined, though, at birth, they are purely automatic in their character. In a short time, however, it is able to extend its arms and hands towards the objects within its grasp, seizing such as are agreeable and avoiding those which will give it pain. To the voluntary motions of the arms succeed those of the head; which, from being tottering becomes fixed upon the neck. At the end of a month the faculty of vision is so much improved, that the infant will turn its head on the pillow, to the right hand, or to the left, when a brilliant object is brought alternately to one side or the other. At two months the infant is generally able to support its head, when it may be carried in the arms without danger of suffering from fatigue; at four months the spine is sufficiently consolidated to support the body in an erect sitting position; at the eighth or ninth month it essays to sustain itself upon the legs and to walk; so that the motions of the head, neck, trunk, and lastly of the inferior extremities, follow each other in their developments, and all the functions of the system become developed, perfected, or altered, in connection with the organisation upon which they depend.

The Colour of the Skin.—The colour of new-born infants is red, owing to the predominance of blood in the tissue of the skin. From the fifth to the eighth day after birth this hue diminishes, but in some cases continues a longer time, though less intense than at first. It gradually becomes of a

violet colour, which is not always an evidence of health, as it often coexists with an œdematous swelling of the limbs. To this primitive sanguineous colour, indeed, several peculiar hues succeed. The integuments become of a beautiful rose, of a remarkably white, or of a yellow, more or less deep. The rosy and vermillion hue, accompanied by firm elastic flesh, is generally an evidence of health. About the age of two or three months, we begin to discover the shades of colour, and the prevailing hue of each infant; before that period the dark-complexioned cannot be distinguished from the fair.

Desiccation of the Umbilical Cord.—The desiccation of the umbilical cord and the time of its separation from the abdomen, differ very considerably in different individuals. Some umbilical cords are large, soft and thick, containing much gelatine; others contain but little, and are small and thin, and desiccate rapidly. About one-third are of the latter kind. Of eighty-six infants, which came under M. B.'s notice, the cords of sixteen were a little shrunk, but at the same time quite fresh. They were soft, bluish, and very flexible, and completely filled the ligature; the cut surface was quite smooth. Of these sixteen, one was of the age of five hours, six of one day, four of two days, and four of three days. But the desiccation generally begins on the first or second day, but sometimes as late as the fourth day. The period of the complete desiccation of the cord varies from the end of the first to the fifth day; on the third day it is generally completed.

M. B. believes that the desiccation of the cord is altogether a physiological phenomenon, belonging to the assemblage of vital phenomena, and entirely dependent on them. When the cord is cut the vessels immediately retract and disappear in the gelatine, which begins to dry away, while the exterior membrane retains its suppleness. The cord shrinks shorter; at the same time a general constriction takes place from the circumference to the centre, whereby the vessels become compressed, flattened and tortuous, and at last partake themselves of the desiccation. Progressing towards the navel, the desiccation at length stops at the umbilical ring, from which the cord is soon separated, either by a proper suppuration, or a spontaneous detachment analogous to that by which the stem of a cucurbitaceous fruit is separated. That part of the cord attached to the placenta does not exhibit the phenomena of desiccation, like the portion remaining with the child, but shrinks and decays like a dead substance, whilst the abdominal portion is not so affected. Here the desiccation ceases as soon as life is extinct; it either does not proceed in still-born children, or it is considerably retarded. In place of drying and separating at the end of a few days, as is observed during life, the cord undergoes, in the dead body, a perfect decomposition, differing entirely from its normal desiccation.

We have often witnessed this phenomenon in infants, brought into the dissecting room, when the cord would continue moist for many days; so that a fœtus may be injected very readily from the umbilical cord as late as the fourth or fifth day. This is an important fact in its application to legal medicine, for it will aid very materially in determining whether the child was born alive, or lived long after birth. M. B. deduces the following conclusions from a large number of observations, viz: 1. The desiccation of the umbilical cord cannot take place except during life. 2. At the period of death the desiccation is suspended, or considerably retarded.

3. If the cord be fresh, or the shrinking but just commenced, the infant may have been still-born, or have lived but a very short time. 4. If the cord has already exhibited the beginning of desiccation, or is completely dry, the infant has lived at least one day. The more recent the death of the fœtus, the greater is the dependence upon these conclusions.

Separation of the Umbilical Cord.—M. B. maintains that the separation of the cord is the result of the constriction which the indurated gelatine exercises upon the umbilical vessels at the umbilicus, and also of the continual pulling from this narrowed point of the cord, so dried and fragile; and that there is neither gangrene of the cord, as Haller thinks, nor constriction of the epidermis, as is asserted by Gardien—a constriction which so inert a pellicle could hardly exert—nor yet a contraction of the skin with inflammation of the umbilicus, as Capuron pretends, neither that it is caused by an active inflammation attended with suppuration, as maintained by others, this last condition having no existence except in peculiar circumstances.

Cicatrization of the Umbilicus.—As the cicatrization of the cord advances, the circumference of the umbilicus appears at first to gather in folds; and it often exhibits a double cutaneous ring, one within the other. The cord detaching itself in a circular manner, the umbilical circle becomes loose, forming a funnel-shaped hollow, at the bottom of which the cord may still be held by one or two vessels which soon separate. In this hollow will be found the ruptured extremities of the vessels, surrounded by cellular tissue, and maintained on a level with the aponeurotic circle, which the *linea alba* forms at this point by a continuation of the *fascia transversalis*. Upon examining the centre of the umbilicus with attention, a sort of hardened tubercle will be seen, produced by the obliterated extremities of the arteries and veins united. As the infant advances in age, this space becomes narrower, the tubercle and the umbilical centre sink inward, the edges of the cutaneous ring approach and become almost in contact, while a true cicatrix forms and solidifies on a level with the vascular tubercle, which retracts more and more in drawing to it the irregular centre of the umbilical cicatrix.

Exfoliation of the Epidermis.—Soon after birth the epidermis begins to exfoliate, sometimes in small furfuraceous scales almost invisible to the naked eye, sometimes in broad plates or pellicles resembling those which form on the surface of milk at the point of ebullition. This process is at its height from the third to the fifth day, though its duration is very variable, sometimes continuing till the thirtieth or fortieth day, and even for two months.

The cause of this epidermic exfoliation is obvious. The integuments of the infant are, for about seven months, immersed in a liquid which keeps them constantly supple and moist. The epidermis, until the period of birth, is, as it were, soaking in the waters of the amnios. When exposed to the air it becomes suddenly dried, and loses the suppleness peculiar to it during the intra-uterine existence. Hence results a cracking and scaling of the epidermis, and its final separation in the form of plates or powder. The result of M. B.'s researches on this subject is, that the cutaneous exfoliation of young infants is a natural phenomenon, and decidedly one of health.

Size and Weight of the Infant.—Professor Chaussier has stated that the embryo increases at the rate of two inches a month; whence it must fol-

low, that at the period of birth it will be about eighteen inches in length. From a very large number of observations, M. Billard shows that from sixteen to seventeen inches is the ordinary size of newly born infants, though Chaussier gives instances where they measured twenty-seven inches. The average weight of infants born at the full period, is stated to be from five to five pounds and a half.

Of the Cry of Infants, considered in relation to Semiology.—The cry is nothing more than a sonorous inspiration and exspiration, and varies in infants as much as the tone of the voice in adults. The proper cry is sonorous and prolonged, and heard only during exspiration; the other part is produced by inspiration—the air in passing through the glottis, in order to reach the lungs, being compressed by a kind of spasmodic contraction of the vocal muscles, giving a shorter and more acute sound than the proper cry, and often less perceptible. Sometimes this interval or reprise is not heard at all, and the proper cry exists alone; or the reprise may be heard, while the cry is stifled. M. B. goes into a very minute and philosophical analysis of the cry, as an index of disease, pointing out its various modifications and deducing some practical conclusions highly important to the practitioner. For an acquaintance with these we must refer the reader to the work itself.

Expression of the Face.—Next to the cry, the expression of the face is one of the principal means by which a child manifests the sensations it experiences. In a state of quiet and health, the face of the child presents no wrinkles, the bony prominences do not appear, the cheeks are round, and there is scarcely any expression in the physiognomy; but no sooner is it under the influence of pain or of joy, than there occurs a very remarkable change in the physiognomy. The marks of pain in an infant can be perceived during the first month, by vertical and horizontal wrinkles at the root of the nose, the eye-lids approach, and a number of wrinkles appear at the external angle of the eye, or are delineated in a circular manner in the direction of the orbicularis-palpebrarum muscle. The painful sensations, indeed, act sympathetically on the organs of circulation and respiration, and the entire nervous circle described by Sir Charles Bell, experiences by irradiation a sudden excitement, whence results the assemblage of thoracic and facial contractions seen in a child while crying and suffering; excessive joy will likewise produce a commotion in the circulatory organs, but it suspends much sooner than it accelerates their movements; and it is well known that excessive joy will cause syncope quicker than excessive grief. Infants rarely smile before they are three weeks old, though they take part in the attempts made to obtain a smile. "In pain," says Cabanis, "the animal retires within himself, as if to present the smallest possible surface; in pleasure, all the organs seem to unfold, as it were, to receive it in all parts."

State of the Pulse in Children.—Most writers assert, without any exception, that the pulse in children is much more frequent than in adults; but M. B. shows that this is only true in the greatest number of cases, while in many the pulse is nearly as slow as that of some old men. Thus in forty children, aged from one to ten days, apparently in good health, there were eighteen where the pulse beat less than 80; in two it beat 86; in one 89; in four 100; in ten from 110 to 125; in one 130; in two 145; in two 150; in one 180. Thus there were as many children in whom the pulse exhibited about the same number of beats as is usually observed

in an adult, as there were of those in whom it beat with much greater rapidity. The pulse increases in frequency in proportion as the child advances in age. It is often irregular in the young infant, jerking, small thread-like and easily compressed, and not always isochronous with the beats of the heart. The pulsations also are often so indistinct as to render it impossible to count them. The First Part of the work ends with a chapter on *Feebleness of Birth*, which contains many judicious and important observations.

The Second Part treats of the *Diseases of Infants;* which are classified under Affections of the Skin, Cellular Tissue, Digestive, Respiratory, Circulatory, Cerebro-spinal Apparatuses, Locomotive System and that of Generation.

Diseases of the Skin.—*Malformations and Congenital Diseases.*—The embryo has no distinct skin till the middle of the second month, at which period the epidermis begins to show itself. Until about four months and a half the skin is thin, colourless and transparent; it then assumes a rosy hue until about the eighth month, when it becomes paler, except in the folds. The sebaceous follicles appear about the middle of pregnancy, first in the head and afterwards in the other parts of the body; at seven months the caseous envelope appears, and at birth the skin is covered with it, and is of a rosy white. The affections noticed by M. B. under this head, are *Absence of the Skin; Cutaneous Excrescences; Alterations of Colour; Spots, or Nævi Materni.* The second section of the chapter treats of *Diseases of the Skin not inflammatory, developed during Birth, or occurring subsequently to this period;* among which are *Ecchymoses, Tumours of the Scalp, Contusions and Petechiæ.* The other sections treat of *Congenital Inflammations of the Skin; Inflammations developed after Birth.* In treating of the other cutaneous affections, M. B. follows, in general, the classification of Willan and Bateman, modified by the more recent work of MM. Biett and Rayer. With Rayer, he denominates inflammation of the skin all diseases characterized, at their commencement, by an accumulation of blood in one part, or in the whole of the surface of this membrane; an alteration followed by a complete resolution, desquamation, morbid secretion, ulceration, induration, or other changes in the organization of the part affected.

The *syphilitic* affections in young children may be known by the eruption following other venereal symptoms; by their resisting the usual treatment of simple cutaneous diseases; by their constant tendency to spread and ulcerate; by their exhibiting a cupreous appearance, particularly on the use of mercury, sudorifics and other remedies used for the treatment of syphilis; and finally, by their manifestation under circumstances proper for the development of the venereal disease. It should be recollected that the exanthemata, pustulæ, papulæ and tubercula are the cutaneous diseases which most often assume a venereal character, and that of all the symptoms produced by mercury, cutaneous affections are the most frequent, rendering the diagnosis both obscure and difficult.

Erysipelas.—This disease attacks children oftener than any of the other phlegmasiæ, owing to the sanguineous congestion of the skin and its consequent irritability. Of thirty cases of erysipelas recorded by M. B., sixteen were simple, three œdematous, six phlyctenoid, four phlegmonous, and one of the miliary form. In two the face was affected, in sixteen the trunk, in twelve the limbs. The ages varied from one day to a year, and

eighteen were below the age of six months. On dissection, gastro-enteritis was found in two, enteritis in ten, pneumonia complicated with enteritis and cerebral congestion in three, and in one pleuro-pneumonia. This disease terminates either by resolution, epidemic desquamation, or by suppuration of the subcutaneous cellular tissue. It is less often accompanied by gastric symptoms than when it occurs in adults, but is usually attended with symptoms of enteritis. It almost always produces an acceleration of pulse, heat and dryness of skin, together with pain and wakefulness. Its duration is from six to twelve days. It varies from that of a simple erythematic redness to that of considerable tumefaction, hard to the touch, of an intense redness, and sometimes of a violet colour.

The *treatment* varies according to the complications. Emollient applications should be made to the inflamed integuments, particularly when the erysipelas has a tendency to terminate in suppuration, and also to prevent the formation of sinuses under the skin, which follow suppuration of the cellular tissue. The enteritic or pneumonic symptoms which supervene, should be met by the administration of mucilaginous drinks, with but little nourishment. The external causes of irritation should be removed; and if the affection be simple, there will be no occasion for any other than topical applications, an attention to diet, drinks, &c.; a severer form is to be met, in addition, by local bleeding and internal remedies.

We observe nothing particularly new under the head of Rubeola and Scarlatina, except the translator's observations on these diseases in the Appendix; which are characterized by great judgment and discrimination, and eminently worthy of the most attentive perusal.

We are obliged to pass by the other cutaneous affections treated of by our author, which occupy nearly ninety pages of the volume, that we may devote the remainder of our article to those diseases which are of most frequent occurrence in this country.

Diseases of the Digestive Apparatus.—In treating of this class of diseases, M. B. adopts the division of the alimentary canal, who considers it as consisting of the cephalic, thoracic and abdominal or subdiaphragmatic portions. After considering congenital malformations, such as *absence of the mouth*, *obliteration of the mouth*, *hare-lip*, &c., he proceeds to treat of the inflammatory affections of the mouth, or the various kinds of *stomatitis*, viz. *erythematic*, *muguet*, (with altered secretion,) *aphthæ*, (follicular) *ulcerous* and *gangrenous*.

Muguet.—This peculiar disease of the mouth was first noticed by MM. Breschet and Guersent, previous to whose labours it was usually confounded with aphthæ. Its peculiar characteristic is a concretion of mucus on the surface of inflamed mucous membranes, whether the membrane be an epithelium or not. This concretion may be observed in the mouth, œsophagus, stomach and small or large intestines. When in the mouth, it appears either under the form of very small white points, dispersed upon the tongue and parietes of the mouth; or of variously sized threads; or, lastly, of a membrane entirely covering the tongue, or spread over the other parts of the buccal cavity. This excretion is preceded by an erythematic inflammation of the surface of the tongue, or of the parietes of the mouth. When the inflammation has continued one, two, or three days, there are seen at the extremity, or on the sides of the tongue, or on the internal surface of the lip, small white points which appear to crown the papillæ of the membrane to which they adhere; indeed, it is a morbid

concretion of mucus. When the inflammation makes no progress, these white points soon disappear; but when it persists, they unite and form small laminæ either on the surface of the tongue, lips or cheeks, which exfoliate and detach themselves, leaving an inflamed surface, which soon secretes materials for a new concretion; until, at last, the inflammation ceasing, the reproduction of morbid matter is no longer to be observed. This affection follows an accumulation of blood in the inflamed mucous membrane, and the pellicular production replaces the normal secretion of mucus. It seems to be owing to the fact, that the blood of children is rendered more plastic and rich in fibrin by the inflammatory condition, thus supplying the elements of a mucus abounding in fibrin. Feeble children, and those that are crowded together, are most subject to this affection, and it prevails with almost equal intensity during every period of the year, though it is more common in winter than summer. The disease is not contagious; nor does it occasion any general symptoms, except heat of skin and great thirst. It is sometimes complicated with other phlegmasiæ; in fifty total cases, M. B. found inflammation of the cerebro-spinal apparatus in two; of the skin in four; of the respiratory and circulatory apparatus in twelve; and of the digestive apparatus in thirty-two. In ten of the latter, the stomach was not inflamed, showing that the affection is not always attended with gastritis.

Treatment.—When the disease is simple, nothing more is necessary than to moisten the mouth of the child several times a day with a piece of lint soaked in a decoction of marsh-mallows. Sometimes a weak solution of chloride of soda is very beneficial, or a little alum. When the disease is more severe and complicated, it must be met with appropriate treatment, such as is pointed out under the history of each of these diseases.

Aphthæ.—According to M. B. aphthæ consist of an inflammation of the muciparous follicles of the mouth. These follicles are extremely numerous and invisible in their ordinary state, but when inflamed, they swell and appear on the internal surface of the lips and cheeks, on the pillars of the velum and the palatine arch, on the inferior surface and the lateral parts of the base of the tongue, under the form of small white points, sometimes exhibiting a coloured spot in their centre, slightly prominent, and often surrounded by a slight inflammatory circle. They gradually enlarge, and from their central aperture there soon issues a white matter, "which being squeezed by the epithelium," the ulceration of which soon commences, leaves the white puriform matter freely exuded over the parts. Aphthæ are apt to be confounded with muguet when they are very numerous and near each other, causing their borders to unite, and spreading the curdy matter which they secrete over considerable extent of surface. The predisposing causes are the same as those of muguet; such as bad nutrition, vitiated air, &c. It is a disease not confined to infants, as adults are affected with it, though it is most frequently met with among such as are teething.

Treatment.—When mild, wetting the mouth often with marsh-mallows decoction, barley-water, or milk and water, will prove sufficient; when more severe, M. B. recommends acidulated gargles; such as a mixture of barley-water and honey of roses, with a few drops of sulphuric acid. The ulcerated parts may sometimes be touched to advantage with a piece of alum, cautiously applied, and demulcent gargles used afterwards. Gargling with a weak solution of chloride of soda should never be neglected. When

the child is restless or in pain, a little syrup of poppies should be added to the gargles, in the proportion of one or two drachms to two ounces of mucilage or gum-water.

Ulcerous Stomatitis.—This is an ulcerous affection of the mouth, differing from aphthæ, which is confined to the follicles, the ulcers occupying indifferently every part of the buccal cavity. Two cases are given, (p. 180,) to show the true nature of this disease, but as it does not differ from the very prevalent ulcerous affection of the mouth in adults, so well known, we shall merely add, that M. B.'s treatment is the same as in aphthæ.

Gangrenous Stomatitis.—This may be the termination of any of the inflammatory affections of the mouth. When aphthæ become gangrenous, their edges shrink and assume a burned, torn, and flabby aspect; thus a brown eschar often forms in the centre, which soon detaches itself, leaving a granulated surface of a vermillion colour. In place of an eschar, the centre of the ulcer sometimes gives off a creamy substance of a brown colour and gangrenous odour. The surrounding parts tumefy, assume a violet aspect, become softer and are easily depressed. In the mean time, from the mouth of the child, always half open, there flows a ropy saliva. The face becomes pale, the patient remains drowsy, and sinks without having exhibited any febrile reaction or cerebral excitation. The pulse always remains extremely feeble, and the skin pallid and insensible. To these symptoms are often added vomiting, diarrhœa, and distension of the abdomen, and sometimes hiccup and frequent eructations.

Treatment.—A wash of gum-water, slightly acidulated. Should no alteration in the aspect of the ulcer ensue, sulphuric or muriatic acid must be used. After the eschar is detached, the surface of the ulcer should be touched with nitrate of silver.

Proper Gangrene of the Mouth, is that form of the disease which does not follow any well characterised inflammation, but appears to be brought about by some particular alteration of the parietes of the mouth. In treating diseases of the skin, M. B. took occasion to point out, that in young infants, the feet, hands, and labia pudendi, were subject to indolent swellings, which frequently terminate in gangrene. The same phenomenon occurs in the mouths of children, especially such as are born feeble, or are badly nourished. We have witnessed two cases of this disease of late, both of which proved fatal. In one case, a child at the orphan asylum of this city, was observed to be drooping and feverish for a day or two, when a small, hard tumour was noticed upon the right cheek, which gradually increased, accompanied with a good deal of tumefaction of that side of the face. In a few days a dark violet spot was discovered over the hard part, which was glossy and shining, having an oily appearance, and very hot to the touch. The pulse was slow and weak, and general prostration great. The gangrene extended gradually, involving the whole cheek, and the patient died on about the twentieth day from the attack. The second case was that of a boy, about twelve years of age, sick of fever. He had taken repeated small doses of calomel, and when I first saw him, salivation was established. The room in which he lay was small, and was warmed by a close stove, and the ventilation very imperfect. About the fourteenth day from the attack, a small dark coloured spot appeared in the centre of his chin, which was puffy, swollen, and glassy. In twenty-four hours it had extended to the size of a dollar, became very offensive, and discharged a

sanious matter. It continued to spread until it had destroyed nearly half the face, when death relieved the patient from his sufferings, his senses remaining perfect till the last.

The cases described by M. B. are very similar to the above, in which he notices very particularly the œdematous swelling of the cheek, the indurated spot in the centre of the engorgement, the muco-sanguinolent discharge, the eschar, and lastly, the extensive disorganization of the cheeks. This form of gangrene may be distinguished from malignant pustule, by the gangrenous inflammation commencing in the interior of the mouth, and thence spreading to the skin. M. B. conceives that this affection is owing to an indolent engorgement, the blood no longer circulating in the capillary vessels, the lymph and serum engorging and spreading through the cellular tissue, and the parts which the blood should nourish, becoming thereby disorganized from the effect of the pressure.

Treatment.—Before gangrene has commenced, and there is merely an engorgement, we should attempt to relieve this by aromatic or dry frictions; and if there should be a circumscribed, hard spot, we should use ammoniacal liniment, and the cheek is to be covered with compresses saturated with a weak solution of hydrochlorate of ammonia. If a slight erosion appears in the interior of the mouth, and on the exterior a violet ecchymosis, we should then cauterize the central part of the tumefaction, either with the water of antimony introduced to the bottom of a crucial incision made on the outside of the cheek, or what is still better, with the actual cautery: and this is to be resorted to at as early a period as possible, to prevent the destruction of the cheek. The mouth is to be washed with acidulated barley water. Emollient cataplasms are proper, to moderate the inflammation. The general treatment must be cordial and supporting.

Passing over Glossitis, diseases of first dentition, those of the salivary glands, and of the guttural portion of the digestive tube, and œsophagus, which are ably treated, we come to *Diseases of the Stomach.*

M. B. shows very conclusively that inflammation of the stomach may occur during the sojourn of the infant in the uterus, and manifested after birth by a pinched appearance of the face, painful cries, and the vomiting of brown matter. These signs, however, may be common to all other diseases of the digestive tube.

Of gastric diseases developed, our author treats of *Indigestion, Lesions of the Stomach, with or without disturbance of its functions; Gastritis,* (1, *Erythematic*, 2, *With altered secretion*, 3, *Follicular*, 4, *With disorganization of tissue.*) In the treatment of Gastritis, M. B. recommends to wean the child, give a sweetened decoction of marsh-mallows, and nourish the child by injections made with a decoction of rice or groats. If the affection is severe, leeches are to be applied to the epigastrium, and frictions over the same region with tartar emetic ointment. No stimulants or tonics must be employed.

The first disease of the *intestinal canal* treated of by M. B. is *Intestinal Indigestion.* We often see children labouring under this affection, affected with diarrhœa; they become pale, and sink into a state of marasmus, and on examination after death, no trace of inflammation is discovered. These children really perish from want of food; they die, it may be said, of hunger, the intestinal canal not digesting either the milk that is sucked, or that which is given to drink. The usual symptoms are progressive emaciation,

paleness of face, continual hunger, diarrhœa, consisting of white mucous matter, containing lumps of coagulated milk, which have passed unaltered. The child dies of marasmus, and the intestinal tube is found after death, without colour, often softened, sometimes inflamed, ulcerated, and disorganized to a greater or less extent. The most usual appearance, however, is a general discoloration, which is the first degree of a species of softening. This alteration of tissue, M. B. considers one of the effects of defective nutrition, which is owing either to the nature of the food, or the mode of suckling to which the infant is subjected. He states that all the children at the Hospice des Enfans Trouvés, who are confided to the care of the wet nurses, are pale, thin, and in a bad condition, and die from imperfect nutrition, with the pathological changes above noticed.

M. B. gives an account of the interesting remarks of M. Poyen, from the *Journal de Chimie Médicale*, &c. in relation to the composition of goats' and human milk, from which it appears that the latter differs from the former in its containing about half the quantity of caseum, and its marked alkaline quality. When a child appears feeble and pale, and does not digest the milk of its nurse, he advises to attempt feeding it with the spoon or bottle, to regulate the quantity and correct the quality, by diluting it with barley water. Children will often thrive upon this who reject the milk of their nurses, and who have wasted away from want of alimentation.

Invagination of the Intestines is of frequent occurrence in sucking infants, and, though it is often met with where no symptoms have occurred during life, yet in general its existence is indicated by well known signs. It is a difficult condition to remedy, yet M. B. recommends baths, abstinence from the breast, laxative enemata, gentle compression of the abdomen, and the administration of olive oil. M. B. believes that constipation, vomitings, and convulsions in infants, if remarkable for alternate emissions and exacerbations, and not preceded or accompanied by symptoms of enteritis, are generally indicative of a nervous affection of the digestive tube, and should be treated with antispasmodics, such as syrup of poppies; but these means are to be used with great caution, as nervous affections of the intestinal canal are much more rare than inflammations in young infants.

Gastro enteritis is a disease of common occurrence in sucking infants. The symptoms are vomiting of greater or less obstinacy, pain in the epigastric region, indicated by a painful expression of the face, and by cries, when pressure is made over the abdomen. It is often difficult to distinguish this affection from simple enteritis.

Enteritis in children may be either erythematic, with altered secretion, follicular, and attended with disorganization of tissue. As these run into each other, and during life are difficult to be distinguished, we must refer to the work for cases and details illustrative of each form of the disease. In 80 cases of inflammation of the intestines examined by M. B., there were 30 of entero-colitis, 36 of enteritis, and 14 of colitis. In the 30 cases of entero-colitis, there were 20 with diarrhœa of yellow or green matters. In all, there was distension of the abdomen, which was more or less painful on pressure. In 12 of these children, there was vomiting of yellow matters, but no gastritis. In all, there was an erythematic redness about the anus, of greater or less intensity, caused by the acridity of the alvine dejections. The tongue was very often red and dry; the skin very hot and arid; the pulse barely indicated fever, but, in some cases, it was slow and feeble. In the 36 cases where the small intestines alone

were affected, there were 20 instances of vomiting, either of drinks or intestinal matters; and in these 20 cases of vomiting, in all these instances, the inflammation was seated in the ileo-cœcal region, and at the valve in 15 instances; so that M. B. thinks it likely that the obstruction resulted from the tumefaction of this valve, thus producing an interruption in the course of the intestinal matters followed by vomiting. In every instance the abdomen was tumefied; in 25 cases, there was diarrhœa of yellow or green matters, like the meconium; the tongue was generally red; the skin hot; the pulse little disturbed, and a redness about the anus in all. These children were from one day to six months old. The proper signs then of enlerits or ileitis in children, M. B. considers to be rapid tympanitis of the abdomen, and diarrhœa accompanied with vomiting; while in colitis, we generally have diarrhœa alone without tympanitis. When to these we add rapid emaciation and an ashy aspect of the integuments, the nature of the disease can rarely be mistaken,

Treatment.—This must be antiphlogistic—one or two leeches to the anus at the commencement, and the use of mucilaginous and demulcent drinks; such as a sweetened decoction of marsh mallows, milk diluted with water, barley water, &c. If the diarrhœa be profuse, and the pain urgent, an enema of starch with from four to eight drops of laudanum should be administered. Opium, however, should be administered to infants with great caution, as they are more susceptible to its influence than adults .Cataplasms to the abdomen should never be omitted. Emollient baths are very useful, The hours of feeding, and the quantity of aliment, ought particularly to be regulated.

Spasms of the Intestines.—In the treatment of this affection, so apt to occur in infants, within the first six months, M. B. recommends leeches to the mastoid region or general bleeding from the arm or foot, under a conviction that it is owing to an irritation of the cerebro-spinal apparatus. Warm baths, assafœtida injections, stimulating frictions over the spinal axis, lancing the gums, if swollen from teething, gentle laxatives, soap suppositories, &c., fill up the catalogue of remedies for this affection. M. B. quotes, with approbation, from an article on this subject, in the *North Am. Med. and Surg. Jour.* for January, 1827, by Dr. Joseph Parrish of Philadelphia, and after treating of "White softening of the gastro-intestinal mucous membrane," he concludes a very elaborate chapter, by ably summing up of the principal symptoms of the diseases of the digestive canal. For his account of cholera infantum, he is chiefly indebted to our countryman Prof. Dewees, as it is an affection "not generally noticed in France." After reading the symptoms, however, of some of the forms of bowel affections above noticed, we cannot believe "that it is a disease peculiar to infants in the United States," but that it prevails extensively in Paris during the hot months, though called by a different name.

Chapter III treats of *Diseases of the Appendages of the Intestinal Canal*, commencing with those of the liver. "English physicians," remarks M. B., "attach the greatest importance to diseases of the liver in children, as they do also in adults. Most of the disorders of digestion are attributed by them to a derangement of the functions of this organ; they attribute many diseases to the qualities of the bile that the liver pours into the intestines. In order to obtain fixed data upon this subject, I have examined the liver in a number of infants with great care, and considered especially the physical qualities of the bile, and the symptoms which they

had presented during life, and I have never seen any thing in these lesions and symptoms which could explain the ideas of the English pathologists in reference to the influence which affections of the liver might exercise upon the health of the child."

Congestion of the Liver is easily caused by any impediment to the circulation of the blood. It is often found in children at birth, especially in cases of asphyxia, where the liver, as well as the large abdominal vessels, will always be found gorged with fluid, black blood. The treatment is the same as that of intestinal, thoracic engorgements.

M. B. thinks that *inflammation of the liver* is a very obscure affection, owing to its numerous alterations of colour and texture, which render it very difficult to know to what cause to refer these changes. As to the alterations in the qualities of the bile of fifty children, upon whom researches were made, in twelve of these, where the liver exhibited all the apparent characters of a state of health, the bile was discoloured and slightly viscid in two; abundant, without colour, and clear like serum in three; of a beautiful green, and in small quantity, in one; black and very abundant in two; small in quantity, and of a clear yellow, in two; and of a yellowish green, and very viscid, in two; showing that, however healthy the liver may appear, the colour and consistence of the bile are extremely variable.

In twenty-eight out of these fifty cases, the liver was much gorged with blood in twenty-eight children; in ten the bile was of a deep green and of the usual quantity; in eight it was of a very pale green; in two it was mixed with blood; in three in was yellow, thick, and concrete; in four in small quantity and of an ochrey colour; in one it was replaced by a white, ropy fluid, like mucus. From these facts it would appear, that sauguineous congestion of the liver does not produce the same change in the bilious secretions, even when the liver is found in the same pathological state. The colour of the liver, as well as its texture, was as variable as the appearance of the bile. The result of M. B.'s researches is, that the appearances of the liver and the bile are very variable, and that it is impossible to establish between the state of the bile still retained in the reservoirs, and the normal and pathological state of the liver, any connection that may lead to general conclusions. Our author believes that the yellow and green discharges in infants, are symptomatic of enteritis, and not of deranged biliary secretion, as is generally supposed; and in proof of this, he states, that in forty-eight children that died of enteritis, twenty had diarrhœa of very abundant yellow fæces, and twenty-six diarrhœa equally abundant, of very green fæces. In fifteen of these cases the liver was scarcely injected, and small in quantity; in four it was very clear; in three very thick and of a deep green; in the rest it presented nothing remarkable. In twenty-five the liver was gorged with blood, the bile presenting different appearances. M. B. criticizes the opinion of Dr. Dewees and others, who consider the green and yellow evacuations in children as an evidence of altered biliary secretion, and condemns the practice of giving calomel, as generally practised in this country, without considering that, in a majority of these cases, active enteritis is present. He more than intimates that the great mortality of children by cholera infantum in this country, is owing to the practice of giving emetics, purgatives, and stimulants, without regard to the pathological condition of the gastro-intestinal mucous membrane, and that it would be more philosophical to endeavour to ascertain in the first place whether there really is a preternatural efflux

of bile into the intestines in this disease. On this subject we beg to refer the reader to the able and satisfactory article of Dr. Stewart, the translator, in the Appendix. In concluding this article, the translator remarks with great justice, "The strictures of the author on the non-success of American practice and prophylactic treatment in cholera infantum are not more just than similar strictures would be if applied to any other disease that baffles the skill of all physicians; such, for instance, as phthisis in all countries, spasmodic cholera in India, America, or France. In many diseases there may be, and often is, a limited view of their nature, when studied only as they are manifested in one organ, without considering the connection it may have with others, and in some cases even the absolute dependence of one organ upon others for the continuance of its healthy functions. To the disease we have just been considering this remark applies with more than ordinary force; and the extended view of it, and the consequent treatment adopted in this country, is the result of a vast accumulation of experience, obtained where the prevalence of the disease is co-extensive with the boundaries of the land, and where its appearance is annually anticipated with the same certainty as that of the season which gives it existence. Those who have recorded this experience are men who have distinguished themselves in the fields of science, and who are unsurpassed in sagacity and in the attainment of the object of all intellectual culture when applied to medical science—a solid, philosophical judgment. It would be impossible, as it would indeed be unnecessary, to attempt to exhibit at length the professional character of some of our distinguished countrymen; but a reference to our numerous medical treatises may with confidence be made in proof of the industry, erudition, and genius displayed in the cultivation of the science of medical philosophy."

M. B. next treats of diseases of the *Urinary Organs*, which we must pass by, to come to the chapter on Peritonitis. This affection is more common among children than is generally supposed, and even, according to M. B., may exist during the intra-uterine life. The symptoms peculiar to peritonitis in children, are, tension of the abdomen, which rises in a point towards the umbilicus; restlessness; pain, indicated by a pinched face and cries; vomiting; eructations; constipation; and, lastly, a general sinking and smallness of the pulse. It may be distinguished from pleurisy by the full sound of the thorax. Dyspnœa not only arises from an affection of the lungs, but also from a tympanitic state of the abdomen, and the laboured movement of the diaphragm. The pain is constant; whereas in spasm and colic, it is remittent. The progress of peritonitis is always unfavourable.

Treatment.—This should be antiphlogistic; one or two leeches should be applied to the abdomen, near the umbilicus, and the child placed in a warm marsh-mallows bath, and linseed poultices applied to the belly. From one to two grains of calomel should then be given, and a few spoonfuls of the syrup of succory, or an injection of castor oil. If the disease yields, the child should not be applied to the breast immediately, but nourished for some time with calves' or goats' milk, diluted with a decoction of oatmeal. The feet are to be kept warm, and the body covered with flannel next the skin.

Ascites.—This disease is generally the result of some chronic phleg-

masia in children, particularly of peritonitis. Children labouring under this affection are generally pale, thin and extremely feeble, the inferior extremities œdematous, and the digestive passages usually colourless or softened. It is more commonly met with after the first year, but is sometimes observed in many young infants; in a few cases it has been observed at birth.

The chapter on *Hernias* and *Prolapsus of the Rectum* contains nothing particularly new or interesting.

M. B. considers *Coryza* in infants to require particular attention, as the irritation is very apt to extend to the brain, producing chronic hydrocephalus. When drowsiness and prostration, and particularly convulsions, occur during the presence of coryza, we should regard them as signs of cerebral irritation and adopt our treatment accordingly. The treatment varies according to the age of the child; removal from the breast M. B. considers absolutely necessary; laxative drinks, such as a decoction of prunes; small doses of calomel; a blister to the neck or one of the arms; and if cerebral complication should arise, it must be met by appropriate means. To change the nature of the morbid action, calomel and sugar, or alum and sugar, may be blown into the nostrils.

Laryngitis in infants is always accompanied with an abundant secretion of mucosity, which is at first clear, but soon becomes thick and yellow. The respiration of the child is laboured, and the cry sensibly altered. This alteration consists more in its tone than in its form; both parts constituting the cry exist, but they are husky. When inflammation of the larynx is violent, the alteration in the cry is more evident; it is often then so faint as scarcely to be heard, whilst the reprise is, on the contrary, acute and predominant. This particular modification of the cry is worthy of particular notice, as it is a positive sign that inflammation exists about the upper portion of the air passages, while the complete absence of the reprise indicates a lesion in the bronchial ramifications or the pulmonary tissue.

Laryngitis, in children, rarely exists alone; it often follows coryza, and is apt to terminate in croup or pulmonitis. Its course is usually rapid, though, at first, the symptoms may be obscure.

When the opening into the larynx is very narrow, the least tumefaction resulting from inflammation, may produce suffocation, followed by spasm and distress, during the existence of which the physiognomy fully expresses the suffering of the patient. The face becomes purple, especially round the alæ of the nose and about the mouth, the nostrils dilate, the mouth remains wide open, and at each movement of inspiration, there occurs a kind of spasmodic contraction of all parts of the body, accompanied with a dilatation of the walls of the thorax. This assemblage of symptoms constitutes what is called *Angina Suffocatoria.* This affection may terminate in resolution at the end of a few days, pass into a chronic state, or soon end fatally from asphyxia. After this disease, the cry often remains husky from the altered state of the tissue from the inflammatory action.

Treatment.—Scant nutriment, leeches, poultices to neck, hot cataplasms to the feet, calomel followed by manna, and injections, are the remedies recommended by M. B. in the treatment of this affection. Should the disease become chronic, a blister or tartar emetic ointment should be applied to the neck; and the neck should, for some time after the disap-

pearance of the inflammation, be kept enveloped in swansdown, fine fur, or flannel.

Croup.—M. B. defines this to consist of an inflammation of the larynx and trachea, complicated with the rapid formation of a pellicular concretion, spread over the walls of the larynx, and propagated thence to the trachea and bronchiæ. He does not believe there is any thing specific in the nature of croup, but that the existence of the false membrane may be accounted for on principles already pointed out, connected with the peculiarly fibrinous character of the blood of children. He states that there exists but a degree between the thick, tenacious, filamentous mucosity, with which inflamed mucous membranes cover themselves, and the membranous exudation of croup; and that both present the same chemical elements. Thus he considers the puriform mucosity of catarrh, the false membrane of croup and the excretion of muguet, as but alterations of the same excretion, which vary only with respect to their form and the parts they occupy. Before this membrane appears, the mucous membrane is always much inflamed, red and gorged with blood; the subjacent tissue also participates in this injection, and when the inflamed membrane is at the same time the seat of sanguineous exhalation, this exhalation is seen to be accompanied or followed by pellicular concretions, from which it is to be inferred that croup is a catarrhal phlegmasia; but that the blood destined to the secretion of mucosity is, in the case under consideration, concentrated in greater abundance, or rendered plastic by inflammation, and imparts to the mucosity that portion of its composition which concretes the quickest, that is, the fibrin; whence arise the striæ, pellicles, and white patches with which the mucous membranes affected with muguet or croup are covered.

Treatment.—M. B.'s treatment of this disease does not vary materially from that usually adopted in this country, viz. general and local bleeding, calomel, topical applications, revulsives, &c. He says nothing of emetics, which we consider very important therapeutic agents in this disease.

M. B. maintains that children are sometimes born with *pneumonia* and *pleurisy*, as well as pulmonary congestion, which are often mistaken for debility, and erroneously treated. Children often perish soon after birth, from the fact that the air does not penetrate the lungs in sufficient quantity to prolong life. We have seen several such cases, where the lungs *sunk in water.* The symptoms of *pulmonary engorgement* in new born children are obscure; but in general we find the respirations laboured, the thoracic parietes not perfectly developed, the face purple, the general colour indicating sanguineous plethora in all the organs, the cry is obscure, painful and short, and percussion yields a dull sound. This affection often terminates in pulmonary apoplexy, when the symptoms are the same as above, only more aggravated. The *treatment* of these diseases should be revulsive, viz. bleeding, warm bath, &c.

Pneumonia.—This disease in infants is generally the result of a stagnation of blood in the lungs. The blood, in such cases, may be regarded as a foreign body, and concurs in producing an alteration in the pulmonary tissue, with which it combines, and is identified with it, causing hepatization of the lungs. In proof of this, we may state that pneumonia almost always follows engorgement of the lungs, and as congestion is more frequent in the right than the left lung, it is that lung which is most frequently affected. The cause may be either mechanical or physical. The disease

is rarely complicated with pleurisy, as is generally the case in adults. Pneumonia may terminate either in hepatization, suppuration, softening, or disorganization.

The symptoms of pneumonia and pluro-pneumonia in children, are, laborious; short and painful respiration; suppression of the respiratory murmur on auscultation; dull sound on percussion; incomplete and smothered cry; cough may exist, or be absent; no expectoration as in adults; peculiar expression of the face, consisting in a drawing of the alæ of the nose outward, a blue circle round the lower part of the nose and commissure of the mouth, which is the result of a disturbance in the general or capillary circulation. The face is often œdematous towards the close of the disease. Febrile reaction rarely exists in very young infants, but appears in proportion as the child advances in age. The pulse is often obscure and small, the skin cold and livid, and the limbs œdematous. Marasmus ensues, if the affection becomes chronic.

Treatment.—Remove all tight clothing; apply leeches to the axillæ of the side affected, the number being proportioned to the strength of the child: and give but little nourishment. If the inflammation persist after sanguineous evacuations, recourse must be had to dry cupping on the thorax, or to blistering the chest or arms; revulsives to the extremities, or intestinal canal. If the pain be excessive, producing continual crying and restlessness, a sufficient quantity of syrup of poppies should be given to procure ease. But little benefit is derived from the use of syrup of ipecac, squills, and other expectorants usually given in this disease, as the bronchiæ do not generally participate in the inflammation, and young children cannot expectorate. In a more advanced age they may be given to advantage. While convalescent, very great care is necessary in protecting the child against cold, as there is great danger of relapse from the great sensibility of the respiratory organs. We should remember, also, that this is a period of life at which the different organs are susceptible in their progress of developement, of acquiring certain modifications which dispose them to idiosyncracies, the influence of which may remain during life.

The author's remarks on *Bronchitis, Pleurisy, and Œdema of the Lungs*, are highly interesting and important, especially the cases which he gives in illustration of the pathology and treatment.

Hooping Cough.—After presenting the result of the researches respecting hooping cough, which have been made by other writers, M. Billard proceeds to point out its causes and nature. He concludes that it is a bronchial catarrh, attended with a peculiar, suffocating, convulsive catarrh, occurring in paroxysms. This indeed gives the disease its specific character, though it must be observed that in adults, as well as children, affections of the trachea, larynx and bronchiæ, often give rise to a sudden, local, or general spasmodic irritation, characterized by spasms of the affected organ, or by general convulsions. Thus tonsillitis, simple angina, croup, foreign bodies in the trachea, or tumours pressing on the trachea, produce a cough more or less suffocating, remarkable for its remissions, and which in many cases has a striking resemblance to that of hooping cough. M. B. explains the mucous vomitings by the relation existing between the mucous membrane of the bronchiæ and that of the stomach. He has never discovered any lesion in the pneumo-gastric nerve, as maintained by Hufeland and Breschet. Autopsic examinations reveal nothing more than bronchial catarrh in its various stages, accompanied with considerable mucosity in the

bronchiæ, which are sometimes sensibly dilated, and exhibit a vivid red colour. The lymphatic gangliæ in the vicinity of the bronchiæ are often found inflamed, and sometimes small vesicles are observed, filled with a creamy, inodorous pus. The disease may be complicated with pneumonia, pleurisy, pulmonary tubercles, chronic enteritis, mesenteritis, meningitis, and hydrocephalus. The symptoms are detailed at great length and much particularity, but they are too well known to need description here.

Treatment.—The indications are to combat the inflammation of the bronchiæ, and moderate or remove the nervous complication. In the beginning of the disease sanguineous evacuations are necessary, both general and local, accompanied with demulcent drinks and revulsives to the intestinal tube; in a word, it must be treated by a purely antiphlogistic method rigorously pursued during its inflammatory stage; as bronchial irritations quickly produce in young infants pulmonary or cerebral congestions, a few leeches to the neck or lateral parts of the thorax, will be proper, if the slightest symptoms of irritation are perceived in these organs. Antimony, squills, ipecac. &c., should be given rather in expectorant than emetic doses.

Mr. B. repudiates the idea that hooping-cough has a certain course to run, and that it is, therefore, useless to attempt to cut it short. In this respect he compares it to intermittent fever, and says it is equally proper to attempt to arrest the one as the other. After the inflammatory symptoms are removed, it will be proper to administer narcotic and antispasmodic remedies, such as the syrup of poppies, assafœtida, hyoscyamus, belladonna, cicuta, &c. To these may be added counter-irritants to the skin, e. g., blisters between the shoulders, ammoniated and tartar-emetic frictions, &c. During convalescence the nourishment should be gradually increased, and the patient removed to the country, if possible. In concluding his observations on diseases of the respiratory organs, M. B. strongly recommends physicians to employ the stethoscope and auscultation in investigating thoracic diseases.

The next chapter treats of diseases of the *Circulatory Apparatus*, occupying some twenty pages, which our limits oblige us very reluctantly to pass over.

The diseases of the *Cerebro-spinal Apparatus* are considered at considerable length and great ability; after taking a rapid view of the development of the brain, and spinal marrow, Mr. B. proceeds to describe their congenital diseases, such as *spina-bifida*, *acephalia*, *anencephalia*, and *hydrocephalus*.

Congestions of the cerebro-spinal apparatus are common at birth. This arises from the abundance of vessels, the slowness of the circulation, and the influence of respiration on the spinal and cerebral circulation. M. B. considers injection of the meninges, of the medulla and of the brain, so common in infants at birth, that it should rather be considered a natural than a pathological state. It often gives rise to no particular, appreciable symptoms; but, if continued too long, it will produce an exudation on the surface of the meninges, and the blood which is the product of this exhalation, is ordinarily coagulated in a greater or less quantity, compressing the brain and spinal marrow, and causing an apoplectic stupor to follow. This effusion extends to the cerebral mass, is always met with in infants who have died of apoplexy, forming what M. Serres calls *meningeal apoplexy*. Injection of the cerebral pulp is also equally common.

Non-inflammatory softening of the brain is a lesion peculiar to the

brain of new-born children, and is the result of congestion of this organ. This softening may exist in one or both lobes; often the whole of the cerebral mass is so destroyed that nothing more is found on opening the cranium but a soft, flocculent, black mass, mixed with a great number of clots of blood, and pulpy flakes. The meninges are not involved in this disorganization, and, notwithstanding the destruction of the encephalon, children will live on some days, not possessing simply, as is vulgarly thought, a mere breath of life, but actually respiring, crying and sucking; this occurs when the disorganization is arrested at the medulla oblongata, which remains unaffected, and which, with the medulla spinalis, controls the phenomena of life. The symptoms of this affection, are diminished vital activity, flaccid and immovable limbs, very weak pulsations of the heart, cold extremities, and difficult deglutition. The result is certainly, and generally speedily fatal. *Treatment*, antiphlogistic.

Spinal Meningitis.—This affection is more common than inflammation of the medulla, giving rise to convulsions or spasms of the limbs, and sometimes of the face, particularly if the inflammation be situated near the base of the brain. In 30 cases of convulsions, in new-born children, M. B. found well-marked inflammation of the meninges of the spine in 20; and in these 20, there were six with inflammation of the meninges of the brain and of the spinal marrow; so that it is probable that convulsions of infants are almost always the result of an irritation or inflammation of the rachidian meninges. Cases are given to illustrate the symptoms and pathological appearances, for which we must refer our readers to the work itself.

Cerebral Meningitis.—The symptoms of arachnitis of the brain differ but little from those of inflammation of the rachidian meninges. It is much more common at the base than at the upper part of this organ; and the only alteration which is found, in children that die from this phlegmasia, often consists of nothing more than a pellicular exudation, more or less thick, applied in irregular layers on the surface of the arachnoid membrane, corresponding with the base of the cranium. These are almost always found beneath the tunica arachnoid and pia mater. One of the most immediate effects of cerebral meningitis is the effusion of serosity in the ventricles. This effusion, designated by authors under the name of hydrocephalus acutus, often takes place before the formation of pellicular concretions, and, even when the inflammation exists, still under the form of a simple injection. This effusion of serosity in the ventricles occurs very quickly in infants. The slightest cerebral or meningeal irritation will effect it, and as the hidden presence of this water in the ventricles produces, either by its contact or by the pressure and distension which it creates, a greater degree of pain and a new train of symptoms, meningitis, or encephalitis, complicated with hydrocephalus, then assumes its peculiar character.

To the restlessness and convulsions, which appear at the commencement of this disease, follows, suddenly, the greatest excitement; the child by its acute cries expresses the violence of its pain, which for a moment ceases, to be renewed with the greatest intensity. This remission in the symptoms is very remarkable; it sometimes observes a periodical return, and it is this, without doubt, that has induced some authors to describe the hydrocephalic fever as intermittent. But this remission is common to all excessively painful diseases, and especially to such as produce some lesions of the nervous system; this is a fact worthy of observation, and which

deserves consideration in the history of every periodical irritation. When the effusion is considerable, the convulsions are less; the limbs, which were very remarkable for their spasmodic rigidity, become completely flexible; the face assumes a peculiar expression, arising from the permanent dilatation of the pupils, and the fixed dull stare of the child, the pulse, which was remarkable for its frequency and quickness, becomes very slow, and is scarcely perceptible. Yet the child will sometimes come out of this state of prostration, and a new state of excitement shows itself; the limbs are convulsed anew, the globe of the eye becomes the seat of spasmodic movements; but this exacerbation is of short duration, and is soon replaced by a state of coma, which usually continues until death. Children that are old enough, complain of excruciating pain in the head, as if the bones were pried apart. The secondary symptoms are vomiting, difficult respiration, angina, alteration of the tone of the cry, and obstinate constipation. When the disease becomes chronic the patient falls into a state of stupor and idiocy which continues during life.

The anatomical lesions are numerous and variable. In some cases nothing is found but a simple vascular injection of the meninges, together with more or less clear serosity in the ventricles. The effusion varies with respect to its quantity and its seat. Its seat is usually in the cerebral ventricles, or in the great arachnoid cavity; it has, however, often been found infiltrated under the pia mater, or between this membrane and the tunica arachnoidea. Its colour varies from clear to a turbid yellow; it is sometimes mixed with albuminous flakes, sometimes of a gelatinous form, between the convolutions of the brain, and is often sanguinolent at the time of birth. There are other appearances often met with, of less importance, but necessary to be described in presenting a complete history of the disease.

Treatment.—This should be prompt, and decisively antiphlogistic, viz: general and local bleeding, calomel, blisters, and the other means usually recommended; and which, in no country, are more successfully or more intelligently employed than in this.

Inflammation of the Spinal Marrow and Brain.—This is less frequent than inflammation of their membranes. Encephalitis is a very difficult disease to detect in young infants. In adults, or children sufficiently advanced, the symptoms of inflammation of the cerebral mass are made known by aberrations of the intellectual functions, whilst that of meningitis shows itself by convulsions, with or without delirium. In young infants, however, it is found that they often perish from complete disorganization of the cerebral mass, without exhibiting any symptoms of this lesion during life; while, as we have seen, inflammation of the cerebro-spinal membranes causes convulsions of the face and limbs, tetanic contractions or pains, cries and restlessness, &c.

Convulsions.—M. B. considers convulsions, as already stated, to be caused by cerebral or spinal meningitis. There are many cases of this kind where, perhaps, it may not be possible to discover marks of inflammation after death, but this arises from the difficulty of distinguishing passive congestion from phlegmasia; besides, irritation of the tissue of an organ may arise before the inflammation can manifest itself, at least to a sufficient degree to be evident to our senses. The author next treats of diseases of the organs of locomotion; of generation; of the lymphatic system; of the eyes; jaundice; of accidental tissues in infants; and of

alteration of the blood; and concludes his work with an elaborate and highly original Medico-Legal Dissertation on VIABILITY, *considered with reference to the pathology of new-born children.*

We have thus given a very brief sketch and analysis of the contents of M. Billard's work, omitting the cases and autopsic examinations. The reader, however, will be able, from the specimens we have offered him, to form a tolerably correct idea of the nature of the work; filling as it most ably does a hitherto vacant niche in medical science. For minute and philosophical research, and clear but cautious reasoning, it may almost serve as a model, and what it lacks in therapeutic detail is supplied by the experienced translator in the Appendix. For correctness and neatness of style, the translation will not suffer, by comparison with the best in the English language; and the manner in which the book "is got up," is creditable to the enterprising publishers. The value of the work is also enhanced by a very able contribution to legal medicine, by the distinguished medical jurist, Professor Francis, of New York. C. A. L.

ART. XIV.—*Anatomical, Pathological and Therapeutic Researches on the Yellow Fever of Gibraltar of* 1828, by P. CH. A. LOUIS, Physician to the Hotel Dieu; President for Life of the Society for Medical Observation of Paris; Member of the Royal Academy of Medicine of Paris. Honorary Member of the Massachusetts Medical Society, &c. &c. &c. From Observations taken by himself and M. TROUSSEAU, as Members of the French Commission at Gibraltar. Translated from the manuscript by G. C. SHATTUCK, JR., M. D., Member of the Society for Medical Observation at Paris: Fellow of the Massachusetts Medical Society. Boston: Charles C. Little and James Brown, 8vo, pp. 374.

THE history of yellow fever, notwithstanding the numerous treatises on the subject, as well as the descriptions which have been published of particular epidemics, is still involved in great obscurity. It is probable, indeed, that this appellation has been bestowed on diseases entirely distinct, though resembling one another in some of their most striking features. In particular it would seem that the bilious remittent of warm climates has often been confounded with yellow fever properly so called. For, that these two disorders are quite distinct, can hardly be doubted, notwithstanding all the confusion which exists on the subject, when we consider the striking differences to be found in their general history, especially as regards the conditions which give rise to them. This confusion, as well as the discordant views which have been at various times entertained relative to the nature and distinctive characters of yellow fever, are mainly owing to the want of an accurate examination and description of the post-mortem appearances considered in connection with the symptoms, and a comparison of both of these with what is found in other diseases. The first step towards supplying this desideratum has been taken by M. Louis, who has now given to the public, an account of his researches on the yellow fever of Gibraltar of 1828. His results are founded exclusively upon his observations in this epidemic, and cannot, of course, be affirmed to be universally applicable, unless confirmed by a similar course of observations in

other epidemics. But whether future investigations shall show that the conclusions of M. Louis are applicable or not to yellow fever in general, they possess great intrinsic value, and throw much light upon a number of interesting questions. Before proceeding further it may be well enough to remark, that the identity of the yellow fever epidemics of Spain and the West Indies has been questioned. The perfect identity of the disease, however, has been admitted, according to Dr. Gilchrist, to have been established at Gibraltar, in 1828, and if further proof of the fact is wanting, a careful perusal of the history of the disease, contained in the work before us is sufficient to produce conviction.

We have no very distinct account of the occurrence of yellow fever previous to the last century, and, indeed, no traces even of its existence anterior to the period of the discovery of America are to be found, unless we are willing to admit as such, the scattered notices in the writings of Hippocrates of violent fevers, accompanied by yellowness of the skin, and sometimes even by the vomiting of a black fluid. It is to be recollected, however, that these symptoms are met with in remittent fever, which exists now, as formerly, in Greece, Asia Minor, and the islands of the Archipelago; places, however, which are entirely exempt from the ravages of yellow fever. Without asserting positively, then, that the disease did not exist, it is certainly true that this existence cannot be traced beyond the period mentioned. It was long after this, indeed, that it was distinctly described; and where the disease first showed itself, cannot be known. No country seemed disposed to acknowledge it as indigenous, and every where endeavours were made to trace its origin to foreign importation. In point of fact, however, it is found to prevail principally in the West Indies and the neighbouring coast of America. Elsewhere its ravages have been limited to some of the northern Atlantic cities, the coasts of Spain, Lisbon, Leghorn, &c., and a few points in Africa.

The origin and mode of propagation of the disease are, for reasons to be presently mentioned, not inquired into in the work before us. It is exclusively devoted to the history of the Gibraltar epidemic of 1828, which commenced in the middle of August, and terminated the twenty-fifth of the following December, after a violent hurricane. To investigate its origin and mode of propagation, a commission was appointed by the French government, composed of Messrs. Louis, Chervin and Trousseau; who arrived at Gibraltar on the 23d of November, and commenced their labours immediately. "The autopsies," says our author, "were nearly all made in the presence of the three physicians, and M. Trousseau and myself held, alternately, the pen and the scalpel." They were assisted in noting the symptoms by several of their professional brethren, amongst whom Messrs. Fraser, Gilchrist, Amiel and Smith are particularly mentioned. These gentlemen also afforded them every opportunity for making the autopsies, and were themselves present. These observations, not required of the commission by government, but undertaken with a view to elucidate the pathology of the disease, were made in common by M. Louis and Trousseau. The subsequent study and analysis of these facts devolved upon M. Louis; on the other hand, the analysis of the documents collected by the commission, relative to its origin and mode of propagation, was undertaken by M. Trousseau, who has been prevented by circumstances from completing his undertaking, so that the subject of contagion and infection is not treated of in the present work, which has

been nine years completed, though now, for the first time, given to the public, and in an English translation. For this we are indebted to Dr Shattuck, of Boston, in whose hands the original manuscript was placed by M. Louis, for that purpose.

After presenting to the reader the histories of a few cases, in order to afford him a good general idea of the disease, our author proceeds in the second part of his work, to examine the description of the post mortem appearances, as contained in twenty-three autopsies, and to compare them with those of other acute diseases, so as to arrive at a knowledge of its anatomical characters. The greater part of the subjects examined were soldiers in the vigor of life, well formed, and some of them athletic. The skin was yellow in all except three; but, as it did not exist in every case, we cannot, says M. Louis, regard it as essential. Exhalation of blood in the subcutaneous cellular tissue and superficial muscles was found in only one case. In the slight lesions found in the brain and its membranes, there was nothing peculiar to yellow fever, the same having been observed in persons who have died of the most common acute diseases. These lesions were an occasional injection of the pia mater, red or lilac colour of the cortical substance in some, frequent but slight subarachnoid infiltration, &c.; whilst, on the other hand, the medullary substance had almost constantly its natural aspect. In the spinal marrow likewise nothing peculiar was found.

Respiratory Apparatus.—The mucous membrane of the air passages, if we except a livid colour occasionally, was remarkably healthy, more so indeed than in those who die of the acute febrile diseases of Paris. Here our author makes the following observation in the form of a query: "But what disease of the kind is accompanied by as slight febrile symptoms as the yellow fever?" To understand the bearing of this remark, we must recollect that it is a favourite point of doctrine with M. Louis that many of the *secondary* lesions in acute diseases are mainly owing to the severity of the febrile reaction.

The most remarkable lesions found in the lungs were black spots of from two to five lines in diameter, or masses of the same colour more or less impermeable to the air. These masses were found in six cases, they had not the granulated aspect of the hepatized lung, presented but slight traces of organization, could usually be easily broken down, and, in some cases, yielded by pressure the blood of which they were almost entirely composed. This lesion corresponds in the main with the pulmonary apoplexy of Laennec, and, although met with in the most common acute diseases of Paris, is much less frequent there than amongst the victims of the yellow fever of Gibraltar.

Its frequency is in accordance with the general disposition to hæmorrhage in this disease, and would seem in this point of view to be characteristic, although scarcely alluded to by previous observers. Gilchrist indeed says, in reference to this very epidemic, that, "the attention of the medical officers of the garrison was directed, by some of the members of the French medical commission, to those dark, well defined, circular patches in the lungs, having very much the colour and consistence of the spleen, which have been noticed in other diseases, and the appearance of which was perhaps merely adventitious on the occasion in question." The conclusion of the English pathologist affords us a striking example of the fallacies to which imperfect observations and comparisons may lead. The

lesion did not strike him as remarkable, because found in other diseases; and, hence its frequency readily escaped him, for want of employing the thorough method of investigation adopted by M. Louis, viz: the careful examination of *all* the organs in *every* case, and subsequently a *strict* comparison of their condition with what is found in other diseases. In this way the importance of the lesion above mentioned was readily established, an importance, by the way, let it be remarked, dependent upon its *frequency.*

Hepatization of the lung was found in only one case:

"Thus," M. Louis observes in conclusion, "as the exhalation of blood in the pulmonary tissue was frequent, the inflammation of that tissue was rare in subjects who had died of yellow fever; the reverse of what we observe in the acute diseases of Paris, where the partial inflammation of the lungs is as common as the exhalation of blood in their parenchyma is rare." p. 72.

The pleuræ were found remarkably free from recent lesions, the pericardium healthy or nearly so, the heart flabby in seven subjects, and its cohesion diminished at least as many times. The aorta contained a greater or less quantity of clotted or liquid blood in all the subjects; and in six its internal surface was of a rose or red colour, a circumstance attributed to imbibition.

Digestive Apparatus.—In some cases the pharynx and tonsils were found more or less red, and the latter enlarged, without other alteration except in one or two cases. The mucous membrane of the œsophagus was natural as regards consistence and thickness in all; blackish, of various shades of brown or red in nine cases. The black colour occurred only where the epidermis was destroyed in whole or in part, and is attributed by M. Louis to contact with the black matter ejected from the stomach either before or after death. *Ulcerations* were not found in a single instance. The epidermis had disappeared entirely or in part in fifteen cases in which the œsophagus was described, and was perfect in five only. M. Louis observes that "this destruction of the œsophagus being found in many subjects who have died of other acute diseases, is not peculiar to those carried off by yellow fever."

Though not strictly speaking peculiar, it would nevertheless seem to be much more frequent in this than in most other acute diseases, having been found in about three-fourths of the cases. In his work on typhoid fever M. Louis does not mention it as having occurred in that or any other of the acute diseases with which he compares it.

Stomach.—In three-fourths of the cases the stomach contained a clear or dark-red coloured liquid, or else a blackish or perfectly black fluid, in different quantities. In the others, the contents were some flocculent mucus, a yellowish matter, &c. The red or black matter varied very much in quantity, and the deeper the colour, the more abundant it was.

"This black matter was not mixed with clots of blood in any case; and we found them in the stomach once only in a subject in which this organ contained a red liquid. Nevertheless, we can hardly doubt that this black matter, when homogeneous, thick, and as it were, pultaceous, was at least in part composed of blood; the vessel in which it was kept, and the bodies plunged in it, being stained red. But what was the mechanism of its formation? We find no vessel ruptured in the whole length of the alimentary canal, so that we must consider it a product of the exhalation of the gastric mucous membrane, although there was no especial lesion of this membrane to explain it." p. 81.

M. Louis then gives the histories of two cases, in which black matter was found in the stomach, whilst the mucous membrane of the latter was perfectly healthy, or nearly so. It would seem, then, that the presence of this black matter cannot be attributed to any appreciable lesion of the mucous membrane; and to explain it, our author thinks we must admit the existence "of a specific cause, probably the same with that of the yellow fever itself." If by this is meant an altered condition of the exhaling surface generally, or some of its elements, peculiar to yellow fever, but as yet inappreciable in its characters, the conclusion may be correct; it would be much stronger, however, could it be shown that a black matter, presenting similar characters, is never found in the stomachs of persons who die of other diseases. Dr. Physick, we believe, first clearly established the fact, that black vomit in yellow fever was a product of the gastric mucous membrane; but he went farther, and connected it with the *inflamed* state of that membrane as its cause. The secretion of the black vomit, he regards as one of the modes in which violent inflammation of the stomach has a disposition to terminate. The same view is taken by Dr. Jackson, in his account of the fever which prevailed in this city in the year 1820. How far the secretion of black vomit may serve to allay the inflammation, when the latter is present at the time, it is impossible to say, from the facts at present before the public. It cannot, however, with any propriety be regarded as a mere product of inflammation, since it is not found in ordinary gastritis, and in yellow fever co-exists, at least, at the period of fatal termination, with an apparently healthy condition of the mucous membrane.

The mucous membrane of the stomach presented a natural aspect, save only slight alteration of colour, in five cases. In the others were found thickening, softening, a red or rose colour, &c. in various proportions. In fifteen of these, also, or in about two-thirds of the whole number of cases, was found a mamelonated appearance, and usually to a remarkable degree. This mamelonated appearance was uniformly accompanied by a change of colour, which was mostly red or orange, and also by thickening or softening, or both; and hence must be regarded, says M. Louis, as the product of inflammation. This mamelonation is remarkable in this disease from its frequent occurrence, and for this reason is a more important feature here than in other diseases.

"Since all the lesions," says M. Louis, "which we have just passed in review are found in different proportions in subjects who die of other acute diseases, it follows, as I have already shown, that the cause of the formation of the *black vomit* must be sought elsewhere; perhaps, in the blood, and perhaps it is the same with that of the disease." p. 98.

After mentioning the healthy condition of the gastric mucous membrane five cases, he proceeds:

"And as it was not altered in all the cases, as its lesion is not inseparable from the disease, it follows that the yellow fever of Gibraltar of 1828, is not a gastritis, that the different lesions of the gastric mucous membrane are secondary or accessory, and that in cases where they were found, they were probably developed at a certain period after the commencement of the disease. And here, too, we may again remark, that the inflammation of the mucous membrane of the stomach in the cases where it was found, was never intense, since this membrane was never very red, nor very much softened. All that we can conclude from these facts relative to the gastritis is, that the yellow fever of Gibraltar of 1828, had a particular influence in its development, since it was more frequent, and

came on nearer the commencement of the principal disease, with which, in some cases, it would appear to be confounded, than in any other acute affection." p. 99.

These remarks seem to us conclusive in reference to yellow fever not being a gastritis, but still it may be objected by some, that this gastritis might have existed in the early stage of the disease, and subsequently disappeared, so as to leave no traces after death. This supposition, however probable it might have seemed at a period when the pathology of the mucous membranes was less understood, must now be regarded as not only gratuitous, but improbable. Without stopping to consider the improbability of the mucous membrane being restored, from a thickened, softened, melonated condition, such as was found in the great majority of the cases, to its natural condition in the course of twenty-four or forty-eight hours, we would merely observe, that to sustain the supposition above alluded to, it must be shown, that in every case, unaccompanied by serious aud permanent cerebral disorder, where the stomach is found healthy or nearly so after death, unequivocal symptoms of gastritis exist during life. By a reference to the five cases before us, in which the stomach was healthy, we find that in three, either no note at all was taken of the symptoms, or a very imperfect one; and that of the remaining two, one had not vomited at any time, the abdomen not being painful on pressure when this point was noted, and the other "did not vomit," and "was not anxious." In one, the disease proved fatal about the commencement of the fourth day; in the other, probably about the sixth; and in the latter, at least, says M. Louis, the absence of vomiting could not be attributed to the delirium, which was momentary. It is worthy of remark, too, that in one of these cases there was no black matter in the stomach, and in the other scarcely any. Thus we see that there is no evidence of the existence of gastritis during life in any one of these cases, and so far as regards the two last, there is strong presumptive evidence, that it was not present at any time. The objection which I have been endeavouring to obviate, is not alluded to by M. Louis, probably because he regarded it as completely untenable, and carrying with it its own refutation; nevertheless, the objection might have weight with some, who, if not satisfied entirely of the justness of the preceding observations, must at least admit, that in the present state of our knowledge on the subject, the contrary opinion is an assumption devoid of positive proof.

Small Intestine.—Its mucous membrane was either healthy or presented only such slight alterations as are found in different acute diseases. The only remarkable circumstance was the presence in its cavity throughout the whole or a part of its extent of a red or black matter in the great majority of cases, and of blood recognisable by all its external characters in one case.

"The presence of the black matter in the small intestine in so great a number of subjects, forms an anatomical character, to be sure a secondary one, of the yellow fever of Gibraltar, and distinguishes it from other acute diseases, in the course of which we observe nothing of this kind, or, at any rate, not oftener than twice in a thousand cases; and the fluid found in these is by no means identical with that of the yellow fever."—p. 107.

The patches of Peyer were natural in every case except one, where some of them near the cœcum were slightly tumified, and hence M. Louis concludes that yellow fever is not a typhoid disease. He further observes:

"And if any one should pretend that the rapid termination of the disease was the reason why no alteration of Peyer's glands was observed, in order to maintain the identity of the two maladies, he would be obliged to explain how other severe lesions were developed so rapidly. Why of two similar diseases, is one rapidly fatal, the other often so, not till after the lapse of a considerable time? why do we observe, in individuals dying of yellow fever, lesions which are not found in those dying of typhoid fever? We may add to this, that very marked lesions of Peyer's patches are found in individuals who die the sixth and seventh days of the disease, whilst nothing of this sort exists in those who die of yellow fever, the same length of time having elapsed since its commencement."—p. 110.

Large Intestine.—Here, as in the small intestine, the most remarkable circumstance was the presence of a black or brown matter, the consistence of which varied in different cases, in some subjects being as firm as common fæcal matter. Wherever this was found, black or brown matter was also found in the stomach or small intestine, or both, except in one instance. M. Louis thinks that the stomach is the source of this matter in most cases, but that occasionally it is the product of the intestines themselves.

Liver.—Its size was natural in every case except two, where it seemed slightly enlarged. In some cases its firmness or cohesion was somewhat diminished or increased, but the most remarkable alteration was one of colour, which occurred in *every case*, and with three exceptions throughout the whole extent of the organ.

"This alteration consisted in a discoloration, the liver being sometimes of the colour of fresh butter, sometimes of a straw colour, sometimes of the colour of coffee and milk, sometimes of a yellowish gum colour (22), or a mustard colour (Obs. 16, 19); or, finally, sometimes an orange or pistachio colour."—pp. 117, 118.

Combined with this discoloration of the liver, was a more or less marked paleness of the blood, which was also diminished in quantity. "So that wherever this appearance of the liver was well marked, the sections of it were dry, and of an arid appearance in the left lobe." The appearance here presented was very different from that of the greasy transformation of the liver, since it was not in any instance accompanied by softening. In the three cases in which the discoloration of the liver was not universal, the right lobe presented its natural colour throughout, or in its obtuse edge only.

"This paleness, this anæmic state of the liver, is the more remarkable, as no other viscus was found in the same condition, and many of them, as the lungs and stomach, contained a greater quantity of blood than usual. Nor can we regard this alteration of the liver as the product of inflammation. In almost all the cases, the organ preserved its usual size, its firmness was as great and it contained less blood than in its natural state. These characters are the reverse of those of inflammation, of acute inflammation especially, such as we must suppose here.

"In the present state of science, it seems to me impossible to determine the nature of this alteration. Nor is the cause of it less difficult to be ascertained. We cannot exactly attribute it to hemorrhage of the intestinal canal, as this hemorrhage did not take place in all the cases where we found the lesion of the liver, nor, for the same reason, to a derivation produced by the inflammation of the mucous membrane of the stomach or duodenum. Nor do we find a similar lesion of the liver at the termination of those acute diseases where this mucous membrane has been inflamed. We should recollect, also, that the first symptoms of the inflammation of the gastric and duodenal mucous membrane showed

themselves sometime after the attack of the fever, whilst the alteration of the liver was most marked in a case terminated by death three days and some hours after its commencement. From this fact, we must place the commencement of the lesion either at the same time with, or soon after, the commencement of the disease itself.

"But the most remarkable fact is, that the liver is the only organ constantly and more or less uniformly altered in the subjects who have died of the yellow fever of Gibraltar, and whom we have opened. Nor is this alteration found in subjects dying of other diseases, so that we must necessarily consider it the anatomical character of the yellow fever. This character is so much the more worthy of our attention, since in the cases where no black matter was found in the stomach and intestines, there was no other means of distinguishing the bodies from those of individuals who have died of other acute diseases."—pp. 119, 120.

M. Louis then goes on to give the history of a case of typhoid fever, which had been handed to the commissioners as one of yellow fever, but where the symptoms and course of the disease differed very materially from those of the latter affection, and where the liver was found natural, several of Peyer's glands ulcerated, and the spleen of four times its natural size. He reports another similar case, and afterwards observes:

"Thus, this fact and the preceding one show, as I have already said, that I was not wrong in the importance which I have attached to the alteration of the liver, since, in a climate different from that of Paris, this alteration did not take place in a disease which more than one physician, though without doubt erroneously, has believed to be more or less identical with the yellow fever.

"Two other consequences flow naturally from the twelfth and thirteenth observations, namely, that considerable differences in climate are not sufficient to alter, at least sensibly, the anatomical characters of diseases; and, secondly, that all diseases are not alike when a fatal epidemic is raging."—p. 139.

We have now placed before our readers a pretty full account of the peculiar alteration of the liver found in the yellow fever of Gibraltar, and also of our author's views respecting it, and chiefly in his own words, or rather those of the translator. Every impartial reader must, we think, admit the justness of the conclusion, that the lesion in question constitutes the *anatomical character* of the disease. Its non-inflammatory nature seems equally clear. Farther than this M. Louis does not pretend to go. He does not endeavour to magnify its importance, nor does he, as we shall soon see, endeavour to trace the symptoms to it as to their source. He is contented to stop when he can no longer have facts for his guide, and instead of indulging in fanciful hypotheses, confines himself to rigid induction. On the other hand, he does not depreciate the importance of other lesions, as, for instance, that of the stomach; nor assert, as has been done, that gastritis is not a prominent feature of the disease, and that ulceration of the stomach never takes place in any form, two instances of the latter lesion having been reported by him. He not only admits the unwonted frequency of gastritis in yellow fever, but establishes the fact upon more certain ground than has been heretofore done, and also points out the very early stage of the disease at which it appears, co-existing apparently, in some cases, with the very first symptoms. He is not afraid, in short, to lay all the facts before his readers, and asks only the same impartiality in the examination, which has guided him in the publication of them. His discovery of the anatomical character of the disease, is a beautiful illustration of the value of the system of observation which he has so successfully

employed; for an altered condition of the liver, in many cases, had not escaped the notice of previous observers, who nevertheless, for want of examining and recording the condition of all the principal organs in every case, and then comparing them accurately and at their leisure with one another, and with what is found in other diseases, have been prevented from determining that this alteration was *constant* and *characteristic*.

It will be recollected that the conclusions of M. Louis are exclusively founded upon facts observed during the epidemic of 1828 at Gibraltar, and hence it becomes an interesting subject of inquiry to determine whether they are applicable to the disease, wherever it is found. In many respects, they clearly are so, but in reference to the characteristic lesion of the liver, it is evident that a greater number of facts than those at present before the public are requisite to settle the question; nevertheless these facts are sufficient to enable us to arrive at a probable result. It is stated by M. Littrê, who had no doubt examined the accounts of a great number of writers on the subject, in his article on yellow fever in the *Dictionnaire de Médecine*, that the liver appears to be altered, especially in its colour, which is almost always rhubarb yellow. Chisholm, in his account of the fever at Grenada, states that, in five cases which were examined, the liver was small, uncommonly flaccid, and of a colour approaching to buff, or a mixture of yellow and that of ashes. Dr. Jackson, in his account of the fever at Philadelphia in 1820, says, "that the liver did not present any constant appearances that could be considered as necessarily arising from the disease."* By a reference, however, to some manuscript notes taken by Dr. Hays, the editor of this Journal, of five autopsies made at the City Hospital during the same epidemic, I find that in every case the liver is noted as being pale or rather pale, though, at the same time, it was regarded as healthy. On the other hand, the liver has been described as healthy, without any mention being made of any alteration of colour, which by no means proves that such alteration did not exist, since it might readily have been regarded as of little or no consequence, and perfectly consistent with a healthy condition. Undoubtedly, however, the liver has been occasionally described as presenting appearances with difficulty reconcilable with the supposition that it was in the condition described by M. Louis. The preponderance of evidence, however, is greatly in favor of the supposition, that an analogous condition of it has existed in most epidemics. The most important evidence upon this subject, is derived from a letter recently received by M. Louis from M. Rufz, a physician for some years established at Martinique, and deeply conversant with pathological anatomy, who states, "that the lesion of the liver which forms the anatomical character of the yellow fever of Gibraltar of 1828, has been found by him in the cases of yellow fever which he has observed at Martinique, and that this is the only constant and uniform lesion." It seems highly probable then that this lesion will be found to be universally characteristic, and, if so, its discovery will constitute an important era in the history of the disease, and add another to the many well earned laurels which grace the head of its author.

The *bile* was thick, scanty, and of a dark green colour in all but two cases, in one of which the gall bladder contained two clots of blood, and in the other a liquid of the colour of urine. Except in the first of these

* Philada. Journal of the Med. and Phys. Sciences, vol. II, p. 21.

cases, the gall bladder and biliary ducts presented nothing remarkable, the latter being free, and their mucous lining natural, so that here, as in other acute diseases, yellowness often takes place without any impediment to the free course of the bile in the biliary ducts. I have often, when in Paris, seen M. Louis point out the perfectly healthy condition of the biliary ducts in cases of jaundice, and since then have had frequent opportunities of verifying the truth of the observation as applied to the diseases of Philadelphia.

The *spleen* was natural in half the cases, and very nearly so in the remainder, with one or two exceptions; a condition very different, as our author observes, from that which is found in typhoid fever.

The *urinary organs* were almost always natural.

The causes of death are next investigated.

"Having already remarked several times at the close of the preceding observations, that it was by no means always possible to explain the death of those who fell victims to the yellow fever of Gibraltar, by means of the condition of their organs, I have now to point out the proportion in which this is the case. There are, however, real difficulties in an attempt of this sort, and in some cases there is even uncertainty. Lesions, apparently slight, may explain the death when they have taken place rapidly, as in the cases now under consideration. And then, again, in the present state of science we cannot appreciate the nature of the specific lesion of the liver, and consequently we cannot determine how far it had any thing to do with the death. I shall have regard to these two circumstances in my investigation of the causes of the death of the individuals, whose histories I am analysing, and for that reason I count on the reader's approbation of my conclusions."—pp. 143–4.

Our author then goes on to show that in eight of twenty cases in which all the organs were examined, the lesions observed were entirely insufficient to explain the death of the patients, and that as the same is not observed in any thing like such a proportion in other acute diseases, it must consequently be regarded as one of the characteristics of yellow fever, at least of that of Gibraltar of 1828. He then says:

"And if observation shows that there is in disease something beyond what we see, that its cause has sometimes a great deal to do with the death of those who are attacked by it, this double proposition is more evident here, where we must admit that the cause of the disease often kills by itself, or independently of appreciable alterations of the organs, and even up to a certain point, of apparent derangement of the functions. We must remember that nearly the same thing happens in many cases of poisoning.

"It results also from the facts we are studying, that if an intimate knowledge of the lesions observed in subjects dying of yellow fever is indispensable to the practitioner, he must also remember that in this disease, as in others, there is something besides these lesions, and that he must profit by all that experience or chance may teach him of the best mode of treatment. The treatment called rational is less sufficient here, inasmuch as the most constant of the lesions, that which forms the anatomical character of the disease, cannot be characterised or appreciated in the present state of science, so that we cannot calculate on treating he disease successfully by any of the established modes or formulas."—pp. 145-6.

Let those who accuse M. Louis of attributing too great an importance to pathological anatomy, after reading the extract which we have just given, ask themselves candidly whether the charge is not unfounded. Further, let them ask if in their own views of the nature and treatment of some diseases, they are not more influenced by what they *imagine* to be the condition of the organs, than M. Louis is by what he *knows* to be their

condition, and some, at least, if they sincerely and carefully scrutinize the grounds of their views, will be obliged to answer in the affirmative. How often do we hear the most preposterous absurdities gravely announced, and sustained upon the ground of some partial, doubtful, or altogether false data, the offspring of a loose and imperfect observation, by men who plume themselves with the idea that they are wonderfully sagacious and profound or even possessed of great practical sense, whilst at the same time they are decrying those who endeavour, as far as possible, to adhere to the most strict system of observation and induction. Let such as these, when they read the extract above quoted, learn a lesson of caution, both as regards their practice and their denunciations, and admit that M. Louis has here placed the treatment of disease upon its most solid basis. So far as our positive knowledge of the lesions will serve as a true guide in practice, let it be employed, but when this fails, let us resort to experience, and not to *speculations* upon the nature of disease. In this way a just theory, partial or general, according as facts will enable us to render it more or less complete, is not excluded.

In that portion of the cases before us where the condition of the organs accounted satisfactorily for the death, as well as where it did so but imperfectly, the fatal termination is attributed principally to the lesions of the mucous membrane of the intestines, and in one case only to exhalation of blood in the intestinal canal.

After a general review of all the morbid appearances, M. Louis goes on to observe that two only are peculiar, or almost so, to yellow fever; the rest being common to it and other acute diseases. The two just referred to are the remarkable alteration of the liver, and the red or black matter found in the alimentary canal; of those of the second class the inflammation of the stomach is one of the most prominent, and as this inflammation did not occur in all the cases, and the glands of Peyer were natural, the inference is conclusively drawn on the one hand that the disease was not a gastritis, and on the other that it was not a typhoid fever.

"What then is the nature of the yellow fever of Gibraltar, of 1828, and where is the seat of it? If it be neither a gastritis nor a typhoid fever, neither is it a hemorrhage, as it has lately been said to be, for the hemorrhage did not take place in all the cases. Is it a disease of the liver? Undoubtedly the liver was the organ principally and essentially affected; still we cannot regard the yellow fever as simply a disease of the liver, because its lesion, at least in the present condition of science, does not explain the febrile symptoms in the cases where this was the only lesion, and in the second place, because it is entirely insufficient to explain the death.

"As then a strict analysis of the anatomical appearances of the yellow fever of Gibraltar, of 1828, proves the existence of a cause, unequal in its operation, and of which but one effect is constant, the specific alteration of the liver, and as in a third part of the cases, it is directly to this cause that we are obliged to refer the death, we naturally ask how does this cause act, through the medium of what system does it exert its influence on the economy? Is it through the nervous system, is it through the blood, in which, however, we have not detected any especial modifications?" p. 164.

The propriety of attributing the death directly to the cause of the disease does not seem perfectly clear, for this cause must first have occasioned certain changes, whether appreciable or not, in the solids or fluids of the economy, or both. Besides a considerable length of time must necessarily have elapsed between the application of the cause and the fatal termi-

nation, since the liver in every case was found remarkably diseased. In almost every case, too, a peculiar red or black matter was found in the alimentary canal, which presupposes a peculiar alteration in the parts from which it was secreted, although our senses are unable to appreciate it. Of the nature of this change, as well as of that of the liver, we are entirely ignorant, and of course cannot say what influence they are capable of exerting; but, admitting that they are insufficient to occasion death, which is highly probable, other changes with which we are unacquainted must have been going on at the same time, to which the fatal termination is directly attributable. Because these changes are not cognisable by our senses, it does not follow that we should not attribute death to them as well as to the cause of the disease, since both are equally unknown to us, and we have the same proof of the existence of the one as we have of that of the other. If we inoculate a patient with the virus of small pox, and he dies of the consequent disease, and upon the examination of the body we do not find sufficient lesions of the organs to explain the cause of death, we would not certainly attribute it directly to the virus which we had applied, but rather to those changes in the economy which had followed its application. Upon the whole it seems objectionable to attribute death *directly* to the cause of the disease, as has been done by M. Louis, for two reasons.—In the first place it is, strictly speaking, an absurdity to attribute directly to a given cause, that which is directly consequent upon an effect of that cause; thus, to say a man died of the cause of a disease, is to say that the disease did not kill him. In the next place, if we take the expression in a more extended sense, in which perhaps it was intended to be used, though it is not so expressed, and suppose it to mean that death was the immediate result of the primary effects of the application of the cause, the proposition is still, if not altogether untenable, at least incapable of proof, as will very clearly appear, if we recollect what was before adduced, that the liver in every case, and the alimentary canal in almost every case were the seat of lesions, the influence of which we cannot estimate, and the existence of which shows that a considerable length of time must have elapsed between the application of the cause and the fatal termination, during which *consecutive* changes must have taken place in the constitution or structure of some of the elements of the economy. It seems, therefore, as though it would be a more correct mode of expression, in reference to the cases before us, to say that the cause of death is unknown.

The *third part* of the work is devoted to a history of the symptoms, the mortality, &c. A general description of the symptoms is first given under two separate heads, as belonging to the fatal cases and to those which recovered, the latter being divided into mild and severe. This description is a perfect model of its kind; the period at which each symptom commenced, their succession, &c., being noted with remarkable accuracy. We should like to transfer it to our pages, but its length prevents us. The most prominent symptoms were an intense headach, chill, shivering, and pain in the limbs at the commencement, followed soon after by pain in the back. To these succeeded moderate heat, a red, glistening and suffused eye, anorexia, and intense thirst. These symptoms continued; the headach during half the disease, the pain in the limbs and heat, a little longer. Pain at the epigastrium usually came on about fifteen or twenty hours after the commencement of the disease, accompanied by nausea and vomiting; dejections rare; abdomen supple, not painful on pressure, except in the

epigastric region; sleep inconsiderable, &c. Pulse moderately accelerated, generally bearing relation to the degree of heat; skin of thorax injected. Towards the middle period of the disease this redness and that of the eyes diminished, and were succeeded by a slight yellow tint; about the same time, or a little later, the matter vomited, from being of a yellow colour, became brown or black, and the dejections blackish or black. At this period the strength diminished and the temperature fell. These are some of the most prominent symptoms of the fatal cases. In some a deceitful remission took place, and in others the mildness of the symptoms was such that patients died without taking to their beds. In the cases which recovered the epigastric pains were less frequent, the brown and black vomit rare, and in the mild cases entirely absent. After laying before his readers the general description, of which we have just given a few of the most prominent features, and in which we cannot fail to recognise, as far as symptoms will enable us to do so, a disease similar to the yellow fever of our own country, M. Louis proceeds to analyse each symptom in detail, to determine its relation to observed lesions, its value as a diagnostic sign, &c. It would, perhaps, be out of place and uncalled for, to follow M. Louis closely in this part of his work, as to do so would require much detail, and we have already devoted considerable space to the previous part. We shall therefore notice this in a cursory manner.

Headache was almost always the first symptom experienced by the patient, and could not be attributed to any morbid condition of the brain, which was usually natural; nor to disease of the mucous membrane of the stomach, which almost always came on after the commencement of the headache, the latter existing only during the first half of the disease, whilst the former increased every day. M. Louis, in analyzing the symptoms, divides the cases into four classes, one of which includes the fatal cases observed by M. Trousseau and himself, the second the fatal cases communicated by others, the third the cases which recovered, observed by M. Trousseau and himself, and the fourth those communicated by others. In the very slight sketch which we shall give of this part of the work, we shall allude merely to the fatal cases observed by the commission, unless in a few instances, in order the more readily to accomplish our purpose and avoid repetition.

Delirium either did not occur at all, or only during the last twenty-four hours, except in three instances, and even here it was slight. Like the headache, the delirium could not be explained either by the condition of the brain or the stomach. During the latter half of the disease, anxiety and restlessness was really great in a number of cases, and in these the mucous membrane of the stomach was always found "incontestably inflamed."

The loss of strength seems generally to have been inconsiderable, and "this fact," says M. Louis, "is in harmony with the condition of the organs, the lesions of which were usually much less severe than in individuals dying of other acute diseases."—p. 198.

Deafness did not occur in any case, and ringing in the ears in only one.

"The sight, properly speaking, was not affected, although the suffusion of the eyes and the sensibility to light were rather frequent. We found the conjunctiva more or less injected in all the cases where it was examined at a period near the commencement of the disease."—p. 200.

"There was no epistaxis in any case. This fact is remarkable in a disease

where the disposition to hemorrhage was so great, and the more remarkable, since epistaxis is frequent in other acute diseases where no such disposition exists, as in typhoid fever; so that in the absence of epistaxis, we have something distinguishing yellow from typhoid fever."—p. 201.

Chills occurred in every case, almost always at the commencement, and were followed by heat, which was generally moderate, and in several fatal cases there was a diminution of the temperature, one, two and three days before the fatal termination.

"We should remark that this loss of heat took place nearly at the time of the gastro-intestinal hemorrhage, that this hemorrhage must be taken into the account in any explanation we may make of the phenomenon, although, as I have remarked in the second part of this work, it cannot be considered one of the principal causes of death, and individuals who have recovered after more considerable hemorrhage from other organs, did not lose their heat in a similar manner."—p. 208.

The frequency of the pulse was moderate. Its force and size were variable, and as, in some cases where it deviated most, in these respects, from the natural standard, there was nothing found in the condition of the heart or stomach to account for this deviation, M. Louis concludes that the cause of the disease had some influence in its production. He says,

"Thus, whilst on the one hand, the inconsiderable frequency of the pulse and the slightly increased heat denote a slight reaction of the artery, the independence of the pulse, as to its fulness or force, of the state of the heart and stomach, seems to show that the cause of the disease had some influence in the production of these different characters. So that the further we advance in the study of the symptoms, the more confirmation we find of what has already been said at the commencement of this work, as to the action of the cause of yellow fever on the economy, independently of apparent lesions of the organs."—p. 210.

The impossibility, in so large a number of cases, of explaining some of the symptoms, the cause of death, &c., by means of any appreciable changes in the organs, seems to be very remarkable in yellow fever; and though, perhaps, common to it and a few other affections, is not found to anything like so great an extent in most acute diseases. So far as the idea of the independence of symptoms, &c. of the appreciable lesions is intended to be conveyed in the extract we have just made, we fully agree with M. Louis, and the importance of the observation must be evident. It points out very clearly, if we mistake not, that the pathology of the disease is to be looked for in some totally different condition of the system from that which belongs to *most* acute diseases, at least of temperate climates. M. Louis is one of those who fully admits that the scalpel does not discover to us all the important changes which take place in the economy; he has not only asserted, but done much to prove that "there is in diseases something beyond what we see;" and it seems to us that he would have enforced this idea and brought it out more fully, as well as adopted a more strictly correct mode of expression, if he had appealed to these changes in the explanation of various circumstances, instead of to the cause of the disease, as he has so frequently done in the present work, on the ground that the changes above alluded to are inappreciable by our senses. But because they are inappreciable, they should not be passed over in the chain of causation, since we have as positive evidence from the necessity of the case of their existence, as we have of that of the cause itself.

Epigastric pain was exceedingly frequent, and, with one exception,

occurred only in cases where the stomach was inflamed. Its greater frequency here than in other acute diseases where the stomach is inflamed, other things being equal, is attributed by M. Louis to the comparative infrequency of delirium in the yellow fever.

Vomiting also was very frequent, and, like the pain, was found, with one exception, in those cases only where the mucous membrane was inflamed. Clear at first, where it commenced the first day of the disease, it became yellowish, blackish, and also completely black. The matter vomited was brown or black in more than half the cases. In some the vomitings continued throughout the whole course of the disease, and were most commonly spontaneous. Among those who recovered black vomit very rarely occurred.

The tongue presented no peculiarity characteristic of the disease, but was more generally white and villous than in other disorders.

In the great majority of fatal cases, yellowness of skin existed during the latter stage, whilst among those who recovered it was more frequently absent.

According to the documents collected by the commission, and in which six hundred cases were recorded, the mortality was in the proportion of one to six and a half. Of the influence of age and sex, M. Louis says:

"Not only was the disease less severe in women than in men, much less in childhood than in adult age; but the same symptoms have not the same value for the prognosis at all periods of life. Thus the black vomit, which in men was the almost certain harbinger of death, took place in a great many children who recovered." p. 261.

In the chapter on *diagnosis* we have a beautiful exposition of the characteristic symptoms of yellow fever, their course, &c., and also of the differences between it and several other affections, viz. typhoid fever, gastritis, and hepatitis. Upon the whole it appears that during life the diagnosis is not difficult in the majority of severe and fatal cases, where the course of the disease was rapid, death taking place in from four to six days, and when black vomit and dejection, yellowness of the skin, and extremely uncomfortable feelings, anxiety or restlessness were present. Doubts could exist only when most of these characters were absent, or when the disease presented itself under an anomalous form, and here a post mortem examination would remove all uncertainty by revealing to us the characteristic alteration of the liver, and in most cases the existence of black matter in the stomach and intestines. We hence see the importance of such examination, and of a knowledge of this alteration of the liver, (admitting that it is truly characteristic of yellow fever under all circumstances,) at the commencement of an epidemic, in order to determine its character. In severe cases terminating favourably, doubts would be more likely to occur, since the black vomit is here generally absent, and the other symptoms are not in themselves pathognomic. A consideration, however, of the course of the disease, of the succession of the symptoms, and the absence of those characteristic of other diseases, will in general be sufficient. Thus:

"In hepatitis there is yellowness, but with it there are also more or less severe pains in the right hypochondrium, and an increase of the volume of the liver, which does not take place in the yellow fever. Then, the more or less severe headache at the commencement, the injection of the eyes, the anxiety, so usual in yellow fever, are not observed, and again the course of the last disease is so much more rapid. On the other hand, though in typhoid fever the stools

are sometimes brownish, this is not often the case, and takes place at a period more or less distant from the commencement of the disease. Then, in proportion as vomitings are common in yellow fever, they are rare in typhoid fever, or are observed only at an advanced period of the disease. A diarrhœa, more or less abundant, is found in the very great majority of cases of typhoid fever, and usually also at the commencement of the disease, whilst an opposite condition of the bowels is observed in yellow fever. The form of the abdomen is natural in this last disease; it is altered, and usually there is meteorism, in the other. The one is accompanied by eruptions on the surface of the body, by delirium, prostration, intense febrile symptoms; an opposite state of things prevails in the other disease. Again, typhoid fevers terminating in recovery, are slow in their course, whilst the duration of the yellow fever is much shorter.

"Gastritis may be distinguished from yellow fever, quite as easily, although gastritis is very frequent in this last disease. In both diseases there are vomitings more or less frequent, accompanied by epigastric pains; but the course of simple gastritis is much less rapid than that of yellow fever. It is rarely accompanied by severe symptoms, by that great anxiety, which is common in yellow fever, even when the patient recovers. The yellowness is sometimes found in the first disease, but only as an exception, and the black or blackish stools are not observed at any period. Nor is the remarkable injection of the eyes to be seen in gastritis, so that, as I have just said, with the slightest attention we can hardly confound the two diseases. In fatal cases, the addition of the black vomit to the other symptoms, would leave no doubt, and the autopsy would complete the demonstration, by the exhibition of certain lesions, of the importance of which I have already said enough, and especially of that of the liver, which does not exist in any other disease, and which forms the anatomical character of the yellow fever." pp. 288-90.

The next chapter is devoted to a consideration of the question, whether a first attack of yellow fever preserves from a second? In order to obtain data for this purpose, a commission was constituted at the conclusion of the Gibraltar epidemic, composed of thirteen physicians, and of which M. Louis was appointed president, M. Trousseau secretary, and Dr. Barry vice president. The medical men of Gibraltar were invited to come before the commission and communicate the results of their experience. Most of them had seen the yellow fever in Spain only, but some had witnessed different epidemics in Europe and America. The number of patients seen or treated by them all, amounted to somewhere about twenty-seven thousand. In this way but one well authenticated instance of second attack was found. In further proof of the preservative influence of a first attack of the disease, we make the following extract.

"From the facts already given, the reader can scarcely have a doubt of the preservative influence of a first attack of yellow fever. But it may be well to add to them the two following, as very remarkable examples of this truth. The first was given to the commission by Mr. Amiel. This gentleman visited professionally two young men of the name of Rey, during the Gibraltar epidemic of 1810. These same persons, in 1821, were on board a vessel anchored in Barcelona Bay during the yellow fever epidemic, which prevailed there. Several passengers on board the same vessel were ill, the whole ship's crew, nineteen in number, died, but the two Reys continued to enjoy perfect health. The second fact was reported by Mr. Broadfoot, and relates to civil and military domestics employed in the care of the sick during the last epidemic. The military domestics, one hundred and sixty in number, had never had the yellow fever in any anterior epidemic. The others, sixty-one in number, Spaniards or Portuguese with two exceptions, had already been its subjects. The two last, and forty of the military domestics, had the disease at different periods of the epidemic, all those, who had previously had it, escaped." pp. 319-20.

In the chapter on the treatment, a comparison is made between the English and Spanish practice; the former mainly consisting of drastic or other purgatives and calomel, with the employment of blood-letting, blisters, &c., as auxilaries; the latter of a mild purgative, as castor oil, with emollient enemata at the outset, purgative enemata at a later period in certain cases, free use of acidulated drinks, no food, &c., mercury being used in desperate cases only. The former plan of treatment was adopted in the army, whilst the latter, or one very analogous, was employed in the city of Gibraltar. In the army, the mortality was one in four and a half whilst in the city it was only one in six, so that the feeling amongst the inhabitants in favor of the Spanish practice would seem to be justified. But we are told that those treated by the military surgeons were adult males in the vigor of life, whilst in the city the male patients were less robust, and a large part of the whole number were composed of women and children. The probability of recovery then being greater under the latter condition than under the former, M. Louis thinks that when this circumstance is taken into the account in the comparison, the Spanish treatment will no longer appear to have had the efficacy which has been attributed to it. Before pointing out the plan of practice which seems most in accordance with what we know of the symptoms and lesions, our author reminds us that death was unexplained in many cases by the condition of the organs. The importance of a negative fact is here very apparent, for when we are convinced that the most important changes in the economy have hitherto escaped us, and that consequently the nature of the disease is altogether unknown to us, we neither reject that mode of treatment which is empirical, nor admit too readily that which is speculative. We make use of our knowledge of the symptoms and lesions as far as it will carry us with safety, and leave the rest to experience. M. Louis recommends moderate blood-letting at the outset with the use of cool and slightly acid drinks, mild enemata, and fomentations to the epigastrium. He does not regard blood-letting as the principal remedy, and thinks it should be repeated only under particular circumstances, as when the vomitings suddenly become frequent, or the epigastric pain severe, the fever being unabated and the patient strong. He proposes the use of astringents to correct the secretion of black matter from the intestinal canal.

"It would, perhaps, be well to prescribe astringents before the appearance of the black stools, when the temperature falls, at the end of the third, or in the course of the fourth day of the disease. Undoubtedly writers have gone too far, and much too far, in considering the yellow fever as a hemorrhagic disease, and pointing out astringents as its true remedy. For, on the one hand, the quantity of blood lost affords an explanation of the fatal termination of the disease in but very few cases; and, on the other hand, patients die who have never had any hemorrhage at all, and this symptom is rarely met with in patients who recover. Still, it ought to arrest our attention, since, in the cases where it exists, it has more or less to do with the fatal termination of the disease."—pp. 336, 337.

He asks, also, whether, in the first period, when the heat is considerable, cold baths or cold affusions might not be used; and also whether, in the second stage, when the temperature is diminished, a hot water or vapour bath might not be advantageous.

The fifth and concluding part of the work is devoted to the consideration of the question, whether yellow fever is ever sporadic at Gibraltar. The facts upon which the conclusions upon this subject rest, were communicated

to the commission by MM. Amiel and Fraser, and consisted of cases regarded by them as yellow fever, extracted from their registers. The cases were forty-five in number and recorded at different periods. After analyzing critically the symptoms of these cases, and the post mortem appearances of those which proved fatal, M. Louis concludes that we must allow several among them to be instances of yellow fever, though many were not so. Had our author been practically acquainted with the bilious remittent fever, which, according to the authority of Dr. Hennen, occurs annually at Gibraltar, he would, perhaps, have restricted the number of those which he has admitted to be yellow fever. However, admitting that a certain portion of them were really cases of this disease, we cannot hence rigorously conclude that the yellow fever is, strictly speaking, sporadic at Gibraltar, since, for aught we know to the contrary, the patients might have had communication with vessels having the disease on board, or which had recently arrived from ports where it was prevalent. For whatever opinion physicians may hold as regards the origination of the disease from such a source, i. e. an infected vessel, when it has prevailed to a great extent; no one, we think, can reasonably doubt that isolated cases have originated in this way.

We have now laid before the reader a general account of the most prominent points in the work before us; a work which, notwithstanding the limited space of time allowed to its author for the observation of the epidemic of which it treats, and his previous want of any practical acquaintance with the disease, contains a more accurate, and in many respects more complete description of it than any which has heretofore been published. Some of his conclusions are altogether new, and others acquire a new degree of value from the greater precision with which they are stated and the conclusiveness with which they are established. Upon the whole, the work cannot fail to exert a great influence upon the views of medical men in relation to the pathology of the disease, and should be in the hands of every one who is called upon to practice in countries where the yellow fever prevails.

For being put in possession, at the present time, of so valuable a contribution to medical science, the profession in this country is much indebted to the translator, Dr. Shattuck, of Boston. His style is easy and perspicuous, and is, in general, free from gallicisms—a circumstance particularly worthy of commendation at the present time, when the reverse is so often met with. If we were disposed to be critical, however, we should object to the use of the term *observation* for *case*, since the latter has been, uutil lately, universally used by English writers, and we can see no good reason why the former should be substituted for it.

The style in which the work is got up is highly creditable. It is, indeed, one of the most beautiful volumes ever published in this country on any medical subject.

T. S.

BIBLIOGRAPHICAL NOTICES.

ARTICLE XV. *Remarks on the Pathology of the Typhoid Fever of New England, as exhibited in its Physical Signs and Anatomical Appearances.* By ENOCH HALE, M. D., Attending Physician to the Massachusetts General Hospital. Boston: 1839, 8vo, pp. 77.

IT is a useful and interesting task occasionally to look back and take a view of what has been done for the advancement of any particular branch of medical science. This is especially the case in regard to fever, inasmuch as the speculations and hypotheses concerning its nature, which formerly constituted our sole method of philosophizing on the subject, have now given place, thanks to modern and more accurate methods of investigation, to a careful study of the phenomena presented during life and the lesions exhibited after death.

Dr. Jackson was the first to call the attention of American physicians to the work of Petit and Serres, which he reviewed in 1815, and he was also one of the first who called attention to the labours of Louis. In his report published last year, he gives the results of 303 cases of undoubted typhoid fever, and of sixty-five others which he considered doubtful. These cases occurred between the opening of the hospital in 1821, and January, 1835, when Dr. Jackson ceased to attend the institution. It was not, however, until 1833, as he tells us, that the same degree of strictness was introduced into the records that has marked the investigations of Louis. The conclusion Dr. Jackson formed from the review of these cases was, that the continued fever of Boston, which has been the same since 1833 as before, is the same as that described by Louis.*

Dr. Hale in the present report has pursued the investigations of Dr. Jackson, commencing in 1833 and brought them down to the present year, so as to obtain a view of the results of all the cases since the records were rendered more strict; and to these he has added the post mortem examinations of fifteen cases occurring in private practice.

Dr. Hale is well qualified for pursuing these inquiries, both from his situation as physician of the hospital, and from his having directed his attention at an early period to the subject of fever. His history of the "Spotted Fever," published in 1818, is well known to the profession.

Dr. Hale follows the example of Dr. Jackson and Dr. Gerhard, in applying the term *typhoid* to the continued fever of New England and Paris, while *typhus* is used to designate that of Great Britain.

The distinctive marks of typhoid fever to which attention has been called, are *meteorism*, *enlargement of the spleen*, *rose spots* on the abdomen, and *sudamina*.

Out of 197 cases, *meteorism* was found in 130. In twenty-four there was nothing in the record to show whether it was present or absent; and in forty-three it is expressly stated to have been wanting.

Enlargement of the spleen Dr. Hale does not consider of much value as a pathognomic sign. This organ is occasionally felt below the ribs, or by pressing the fingers under the cartilages during a full inspiration. In many cases it cannot be felt even when examination after death shows it to be much enlarged.

* See this Journal for November, 1838, p. 131.

Where it is felt, however, it may be regarded as a pretty sure proof of the nature of the disease. It was felt in nineteen cases, not felt in twenty-one, and not noted in 157.

Rose spots are recorded in 177 out of the 197 cases. In a greater part of the remaining twenty, sufficient attention does not appear to have been paid to them to render it certain that they did not exist. Most of the omissions occurred in the earlier part of the period above specified, before the full importance of this diagnostic mark was appreciated. Dr. Hale considers them as a constant attendant upon the disease.

Sudamina were noticed in seventy-five cases, and probably existed in many in which they were not recorded. It is stated that they were not found in fifteen cases.

Dr. Hale proceeds to the inquiry, whether these marks are found in other acute diseases? The whole number of these which had occurred in the hospital was 159, omitting those in which there was primary local disease. Meteorism is recorded in nine. The spleen was felt below the cartilages in none; rose spots were observed in none; sudamina in eight. Allowance, he remarks, should be made for the greater attention with which these appearances were sought for in fever than in other acute diseases. The conclusions are, then, that meteorism is rarely found in other diseases, while it is quite common, but not entirely constant, in typhoid fever. Enlargement of the spleen, when felt pretty strongly, indicates the disease. Rose spots are found in nearly every case of this; but not in any other disease. Sudamina are of little value as a diagnostic sign. Although oftener found in this than in other diseases, they are neither constant nor are they limited to typhoid fever.

The whole number of post mortem examinations given by Dr. Hale is thirty-three. The head was examined in fourteen. There was some effusion of serum in the arachnoid or pia mater in ten cases; an increase of bloody points in the cerebrum with other marks of fulness of the blood vessels in four; glands of Pacchioni enlarged in two; and three were healthy. These appearances are not peculiar to this disease, but are found quite as often in many others.

The passages in the neck were examined only in seven cases. Ulceration of the epiglottis was observed in one case, and ulceration of the tongue in two. In the remaining four all the passages were healthy.

The state of the lungs was noticed in thirty-one cases. In eighteen they, as well as the pleura, were healthy; in three there was effusion into the cavity of the pleura; in eight hepatization more or less of the lungs, sometimes in one or two small masses; at others extensive; and, in one or two cases, in both lungs. In two the lungs were engorged with blood; in one infiltrated with serum; and in two there was more or less emphysema. The heart was examined in twenty-eight cases. In three there was somewhat more than the usual quantity of serum in the pericardium. The structure of the heart was healthy in all, except rather flaccid in two or three. In about the same number there was a little thickening of the mitral and semilunar valves.

In the abdomen the morbid changes were more important. The peritoneum was sometimes found extensively and highly inflamed. In the greater number it was not particularly affected. The condition of the stomach is noted in thirty-two cases. In seventeen it was nearly or quite healthy. In six there were ulcerations in the mucous membrane, in one case perforating it; in the remaining five small and superficial; in five the mucous membrane was softened more or less extensively, but in no case thickened; and in five it was somewhat mamelonated.

In the small intestines the mucous membrane generally was healthy, except that it was often of a deep-red colour in the lower part of the ileum, and sometimes a little softened.

Dr. Hale next speaks of the appearance of Peyer's glands in their natural state, and describes the changes produced by disease. He notices four classes of appearances, according to the stage of disease in which the patient has died. When this occurs early, there is a well defined uniform thickening of the altered

patch, commonly of a light-red colour over the whole surface, sometimes surrounded by a deeper red line; the intervening surface being softened and studded with numerous minute, white, opaque points. Twenty or more of these patches are often discovered. They are most numerous at the lower extremity of the small intestines, and the disease is always more advanced in those near the cœcum than at a greater distance.

In a somewhat later stage ulcerations are observed in some of the diseased patches. They are of different sizes, sometimes quite small, at others occupying nearly the whole patch. They are situated in the submucous cellular coat of the intestine, laying bare and sometimes destroying the muscular coat; in some instances they penetrate the peritoneal coat. In these there is the same evidence of greater progress in the patches near the cœcum. Not unfrequently there is a particularly large and deep ulcer almost or quite in the cœcal valve, while some elevated patches, higher up, are free from ulceration.

In cases where the patient has relapsed after a temporary convalescence, when he dies of pneumonia, or other cause, after a long struggle, the ulcerations of Peyer's glands are found cicatrized. The margin is of a bluish or grayish colour, and sometimes the colour is diffused over the whole patch, and a delicate mucous membrane is found extended over the cicatrized surface. The cicatrization is found further advanced near the termination of the ileum than above, showing, as in the other cases, that the affection of the glands began in this part.

The fourth class of appearances are formed by perforation of the intestine. This is of various depths, sometimes it takes place in the peritoneal coat, and the contents of the intestine are poured into the peritoneal cavity, producing violent inflammation and speedy death. This termination is not confined to cases that have been previously remarkably severe. It often occurs in those at first of a mild character. The patient has been walking about the room with a confidence of a speedy recovery, when he has been suddenly seized with excruciating pain in the abdomen, and died in a few hours. There are no intimations by which the danger of this occurrence can be foreseen.

In one or more of these modifications, an affection of Peyer's glands is found in every case of typhoid fever. Out of the thirty-three cases, nine presented only the first stage of this affection; thickening, softening, and a red surface. In eighteen, while some of the diseased patches were in this stage, others, near the lower extremity of the intestine, had passed into ulceration; the ulcers varying in number from two or three to twenty or more. In three some of the ulcers near the cœcum had been cicatrized, and in three the intestine was perforated. The perforation was in no instance in the ulcer nearest the cœcal valve, and in one case it was at a distance of four inches. The periods when these changes occur are various. In two, ulcerations were found before the twentieth day, while in one the disease had continued four months, and there were but three ulcers and no cicatrization.

The solitary glands in the small intestines were enlarged in fifteen cases. In eleven, they were not visible; and, in seventeen, they are not mentioned in the record; probably they were not enlarged. The affection of these glands was chiefly found in the lower portion of the intestine. In the large intestines the solitary glands were found enlarged in five cases; healthy in seven, and in six they are not mentioned. In two, the mucous membrane was softened. In seventeen, ulcers quite numerous were found in the cœcum or first part of the colon. These ulcerations were not large, like many of those in Peyer's glands, but small and distinct. In one case, in which the immediate cause of death was hemorrhage from the bowels, a firm coagulum of blood was found hanging from an ulcer in the cœcum, showing the source of the hemorrhage. In this, and many other cases of hemorrhage, both the large and small intestines contained a considerable quantity of blood.

The condition of the mesenteric glands corresponded to the state of disease of the intestinal canal. Those glands which belonged to the healthy portion of the

Intestine were healthy, while those of the diseased part were enlarged, red, and infiltrated. At later stages they were found softened and sometimes suppurated.

The liver was examined in twenty-seven cases; its structure was healthy in fourteen; more or less soft and friable in ten; hard in one; congested in one, and in one the serous coat of the left lobe was highly inflamed and covered with a coating of lymph.

The spleen was large in twenty-one cases. In some it was enlarged to twice or thrice the natural size, and then commonly soft in its internal texture, breaking down by pressure into a sort of thick, dark red fluid. In seven cases it was of its natural size; in two small; in two its condition was not noted.

Dr. Hale gives an abridged history of four cases, one in illustration of each of the forms in which he has described Peyer's glands as affected.

He next proceeds to inquire as to what extent the same morbid appearances are to be found in other acute diseases. For this purpose he examined the records of 159 cases of acute diseases at the hospital. Of these eighteen were fatal, and fifteen were examined after death. Sufficient data were not found for a comparison of the state of the head, lungs and heart. The stomach was noted as healthy, or nearly so, in seven cases; the mucous membrane was mamelonated in three, and in five its condition was not particularly described.

The state of Peyer's glands is referred to in eleven cases, in all of which they were healthy. In two the organs of the abdomen are declared healthy; in two no reference is made to them. Dr. Hale mentions six other cases of similar diseases, in all of which they were healthy. He states that there is no other disease except typhoid fever in which these glands have been found diseased in the adult. In phthisis they are the seat of ulceration and of tubercular deposits, but the appearances do not resemble the thickening and ulceration of typhoid fever.

In teething children the glands are affected in precisely the same manner as in typhoid fever. Dr. Hale has seen six cases in his practice, of children, who have died during teething, in which the glands were thus affected.

In four of the fifteen cases of acute disease, before referred to, the solitary glands of the small intestines are noticed as enlarged; and in one they were ulcerated in the cœcum. In the remaining eleven they are not mentioned, probably because no disease was observed in them. The spleen was mentioned in three cases, in four it was small, and in three of natural size or healthy. In one case where it was large, and in two where it was small, its texture was soft. The liver was examined in all the fifteen cases. It was healthy in seven, and somewhat soft or friable in eight. In three it was large, in three small, and in nine its size was not noticed as unnatural. The other organs furnished no points of comparison to demand attention.

From this statement it appears that the spleen, stomach and liver, were affected in a less proportion of cases than occurred in the observations of Louis. Dr. Hale, however, considers the only essential difference between the fever of Paris and New England, to be in the greater frequency of diarrhœa in the latter. This difference is, however, the same in other acute diseases.

The fever of the continent of Europe appears, by the report of varions observers, to be the same with that of Paris.

Dr. Hale next comes to a comparison of the typhoid fever, with the continued fever of Great Britain. He observes that as so large a portion of our medical literature is derived from England, it is more important for us to know whether diseases similarly designated in the two countries correspond, or whether they are different.

The labours of Louis have met with comparatively little attention in England. The few observers who undertook the investigation, found that the results did not correspond with those of Louis, and thence concluded, not that the fever of Great Britain was different from that of Paris, but that the observations of the French physician were erroneous, or that the lesions noted were merely accidental. Within the last year, indeed, more attention seems to have been paid to the subject.

Dr. Hale enters into a full examination of what has been furnished by English observers upon this subject. The result of this examination goes to show that the fever described by Tweedie, Southwood Smith, &c., and by the earlier English writers, is the same with that of Paris; but that within the last eight or nine years a new epidemic has appeared there, commencing in Ireland and Scotland, and soon extending over England. This fever is more sudden in its onset, more violent in its symptoms, and more rapid in its course than the typhoid. In a large proportion of cases it is destitute of the characteristic affection of Peyer's glands. It corresponds, in short, with the affection that has been described by Dr. Gerhard as epidemic in the Philadelphia Almshouse in 1836.*

Dr. Bright seems to have been the first English writer who noticed the affection of the glands of the ileum in fever. He gave an account of ten fatal cases, with dissections and figured illustrations of the morbid appearances in the several stages of the disease. These cases occurred in Guy's Hospital in 1825, 1826 and 1827, and were published in his Reports of Medical Cases, in 1829. They seem to have met with little attention. There is no doubt, however, that they were genuine cases of typhoid fever.

Dr. Hale allndes to a question of great practical importance. This is, can we always distinguish the two continued fevers from each other by their symptoms during life? It appears that Dr. Lombard and other observers, who were familiar with the typhoid fever of Paris, were much astonished at finding cases in England, of what appeared to them genuine typhoid fever, but which show none of the post mortem appearances which they had confidently expected; so much so that Dr. Lombard, nnder the first impulse, abandoned the opinions formed upon six years' investigations, and concluded that typhus fever was a general disease affecting the whole constitution, rather than a malady depending upon any local inflammation or any change of structure.

It appears, then, from the investigations of these and other accurate observers, that in the present state of our knowledge at least, the fever called *typhoid* or *dothinenteritis*, cannot always be distinguished during life from that designated *typhus*. It is not impossible that further inquiries may show other marks of distinction, which are not now recognized. As it is, however, the general characteristics of the two are such that they can be, in most cases, distinguished.

The most important characteristic of the French and New England fever, consists undoubtedly in the affection of Peyer's glands. But can we consider this affection, which in many cases is slight, as sufficient cause for the whole disturbance of the system and for the fatal result in many cases? This seems to be the opinion of Louis, and it is decidedly expressed by many of his followers. The cause seems to be an inadequate one, and it is more rational to conclude, as does Dr. Hale, that it is an effect, like the general disturbances of the system, of some cause at present unknown.

If professional men throughout our country would imitate the example given them by Drs. Jackson, Hale and Gerhard, we might soon have such information from all quarters as would go far to decide this question, and at the same time give us great additional knowledge on the subject of fever.

With regard to the treatment of the disease, the result of the cases at the Massachusetts hospital, for the last two or three years, have been more in favour of a mild treatment and less in favour of an active course, than was approved by those up to the time to which Dr. Jackson's report extended.

In conclusion, we think the report of Dr. Jackson and these "Remarks" of Dr. Hale ought to be in the hands of every member of the profession. They deserve our admiration for the impartiality and freedom from hypothesis with which their results are communicated, and our gratitude for the labour and accuracy with which their investigations have been pursued.

E. W.

* Vide vol. xix, p. 289, and vol. xx, p. 289, of this Journal.

ARTICLE XVI. *Diseases of the Uterus, a series of Clinical Lectures delivered at the Hospital la Pitié.* By M. LISFRANC, and edited by H. PAULY, M. D. Translated from the French by G. H. LODGE, M. D., &c., Boston, 1839.

SOON after the publication of the original, the attention of our readers was invited to this work, (see our Number for November, 1837, p. 179); but as, on that occasion, we restricted ourselves mainly to a notice of that portion of it which treats of amputation of the neck of the uterus, and as the remaining parts contain matter of much interest, we shall take advantage of the appearance of the translation of Dr. Lodge, to present a brief summary of these last.

The first part is appropriated to remarks on the surgical anatomy of the female organs of generation, designed to elucidate diagnosis and to simplify operations. Attention is called, in the first place, to the anatomy of the perineum, and particularly to a fold of this part, which is important upon several accounts. It consists of an erectile tissue, whose thickness varies in different individuals. In the efforts made to expel a foreign body from the cavity of the pelvis, this erectile tissue frequently forms upon the perineum a tumour almost hemispherical, soft and spongy, and generally as large as the extremity of the little finger. It has sometimes been considered anormal, but disappears with the exertion that produced it. The perineum varies in breadth from four lines to an inch, and as much in its antero-posterior diameter. Its anterior portion ceases to constitute a part of the perineum, being formed by a transverse fold, flattened from above downwards, and slightly concave in front, where it terminates in a thin edge which is continuous from before, backwards and upwards, with the mucous membrane of the vagina, and downwards with the skin covering the perinæum. This fold consequently leaves above it a small cavity corresponding to the posterior portion of the opening of the vagina. The small triangular surface above it is the *fossa navicularis*. When the space between the arms and vulva is very broad, this fold sometimes projects many lines; but when the interval is narrow, it is scarcely visible. The broader the perinæum, the shorter the vulva, and *vice versa*. The breadth of the perinæum and the shortness of the vulva does not, however, diminish the extent of the vagina. The rupture of this fold is common in childbirth, and of secondary importance;—that of the perinæum is rare. It may be cut in surgical operations, without danger of implicating the perinæum; and thus, what is often an important impediment to the operation, may be removed. A correct knowledge of this fold is of importance in performing amputation of the uterus, and in introducing the speculum.

The anatomy of the labiæ we may pass over, as well as that of the urethra. The situation of this outlet is not always the same. Lisfranc has seen it opening, in a small red tubercle, upon the mons veneris.

The anatomy of the *vagina*, and particularly its connection with the uterus, at its upper part, is a more important subject of study, since upon this depends the expediency of Lisfranc's operation of extirpation of the uterus. Upon his superior knowledge of the structure of this part, L. bases his claims to a successful performance of the operation.

Although the vagina is small near its orifice, its superior third is dilated to an extraordinary degree, so that it can be pushed back freely in all directions, oftentimes against the walls of the pelvis. If the canal were cylindrical, the finger, on reaching its extremity, would be unable to ascend higher and examine the body of the uterus, and the physician could only examine by the rectum and hypogastrium. On the contrary, the upper third of the vagina is enormous, and affords opportunity for examining at least the lower third of the uterus. The posterior and lateral walls of the vagina are in immediate connection with the peritoneum, so that a perforation here would communicate with the cavity of the abdomen; in front, the fundus of the bladder would be opened.

The idea that long prevailed, that the attachment of the vagina about the neck of the uterus was annular, Lisfranc says is erroneous, and has nearly caused the rejection of an operation which he has performed with great success. From

fear of penetrating the peritoneal cavity, surgeons amputated the neck of the uterus very near to its lower extremity; and the disease not being eradicated, generally returned. Lisfranc observes, that he has shown that the insertion of the vagina upon the neck is much broader. On measurement, in more than one hundred cases, its width was found to vary from six to fifteen lines, and the least distance from the inferior part of the neck to the peritoneum was nine lines in front and ten behind. This discovery, he says, has enabled him to excise, without fear of accident, three quarters of an inch of the uterine neck, still leaving the insertion of the vagina sufficiently strong to bear the weight of the viscera. Disease, by increasing the dimensions of the neck, enlarges the insertion of the vagina, and hence the pathological condition of the parts is more favourable than the healthy, for the operator. The lecturer and the editor, we may observe, do not altogether coincide in regard to the anatomy of this part, as they do not with regard to the value of the operation. The description of the uterus and of anomalies of the genital organs, we must pass over and come to the second chapter.

This chapter is occupied with the modes of examining the internal organs. These are two: the touch and the use of the speculum. Minute directions are given for examinations per vaginam, &c., which are worthy of attention. With regard to the speculum, Lisfranc approves of its use, provided it be employed in urgent cases only. But it is an unyielding voluminous instrument; its introduction is frequently painful and an additional source of irritation. Previous examination by touch is necessary. Ample directions will be found in this section in regard to the circumstances under which it may be employed, and the method of using it.

Part II, embraces the "Diseases of the Uterus, generally." The, editor following (as we understand it) the arrangement of Lisfranc, considers them as connected by so many common characteristics that it is indispensable, at first, to treat of them collectively—to sketch a general outline to be afterwards filled up. This arrangement we consider objectionable, and it proceeds from what we think an error in the views of Lisfranc; this is, the regarding nearly all diseases of the uterus as the result of inflammation, or sub-inflammation of this organ. This idea pervades the volume, and is the foundation of all his plans of treatment. We find, in this part, an account, 1st, of the pathology and anatomy of the uterus, observed upon the dead subject; 2d, of the principal causes of uterine affections; 3d, of their symptoms and progress generally, and of their prognosis; 4th, of their general treatment; 5th, of the selection of remedial agents and their mode of employment; 6th, of diseases which may complicate affections of the uterus in their different stages.

Among the causes of uterine disease abortion is alluded to, and the inquiry arises, to what is it attributable, or in what manner does it act as a cause of disease? It is most probable, as is suggested, that it is produced by a diseased state of the uterus antecedent to fecundation, and that this state is aggravated by the exertion of expelling the fœtus. The whole course of pregnancy also, though it may for a time mask and perhaps retard the progress of the disease, must eventually increase it in a very great degree, unless the affection is of a mild character, and of such a nature that it may be removed by conception acting as an alterative. It is remarked that those who have cancer of the uterus have generally aborted one or more times.

In section third, on the symptoms, etc., of uterine disease, attention is called to the first appearances of affection in this organ. If there is difficulty in France in ascertaining the existence of uterine disease at an early period, the difficulty is much greater among us. It is not easy to induce patients to observe and to communicate with accuracy the early symptoms of disease—such as the appearance, quantity, and constancy of the discharge, etc.—when they are not convinced that they have a disease of any important character. The following are the first evidences of an affection of the uterus mentioned in the work under review. The first indication of local affection is an occasional slight metrorrhagy, most commonly without pain. At other times the discharge is white,

and persists during the interval of the catamenia. The breasts swell slightly, occasional pains are felt about the loins, especially after walking or riding. In standing there is an uneasiness, a bearing down in the pelvis, a dragging sensation in the loins which fatigue the patient so much that she is obliged to sit down. Coition is occasionally followed by a little blood and by an uneasiness or nervous erethism which renders it highly repugnant. As the disease advances, the pain and other symptoms increase, the nervous irritation becomes excessive, and produces paroxysms of hysteria. To these symptoms are added those that belong to the character of the particular affection. We may remark here that, as we have before said, Lisfranc considers the origin of all diseases of this system to depend upon sub-inflammation. Most of the sensations described are those which belong to that affection which has been designated as irritable uterus, and considered rather a nervous disorder than as an actual disease—a functional rather than an organic lesion. We are told in the volume before us that the views of Lisfranc are the results not merely of theory, but of long experience—still the experience of a surgeon is different from that of a physician—organic lesions are more within his province, and he necessarily sees more of them than of functional. Inflammation is a chief agent in the productions of the various affections which require his aid; and he is naturally led to believe it to be at the foundation of nearly all disorders.

Lisfranc believes the cases to be very rare in which uterine disease disappears of itself, without treatment. Most generally, if not arrested by medical interference it terminates fatally. Cases of insidious disease of the uterus he considers frequent. He is in the habit of meeting annually with twenty or more such cases. The complaint progresses silently and secretly, the symptoms being very slight, and the patient remains in good condition, with a fresh complexion and all other marks of health. Her power remains unimpaired as long as neither pain nor fluxes interfere to crush them. These become suddenly developed, violent pains occur and prevent the possibility of sleep, hemorrhage succeeds hemorrhage, the digestion fails, the feebleness increases astonishingly, the skin becomes dry and dirty, and colliquative diarrhœa terminates the scene.

The principal symptoms of uterine disease, as laid down in this volume, are these: a white discharge, nervous pains and phenomena, metrorrhagies, reaction upon the mammary glands producing swelling of those parts, and sympathetic gastro-enteritis. With regard to the discharge, it is remarked, that a yellowish white, thick, and well-formed pus pretty generally indicates acute and recent inflammation of the mucous membrane, and nothing more. The breasts enlarge in the early stage of uterine disease, but at a later period they diminish in size and lose their firmness. The symptoms enumerated indicate disease of the uterus, but none of them indicate its character.

Section fourth is upon the general treatment of uterine diseases. From what has already been said of the opinions of Lisfranc with regard to the general nature of uterine disease, we may readily divine that his principal treatment must be antiphlogistic. The chief indications are stated to be, 1st. To remove irritation present in the uterus and its appendages; 2d. To quiet pain; 3d. To divert elsewhere the determination to the uterine system; 4th. To dispel congestion already existing; 5th. To prevent relapse.

General bleeding is considered by Lisfranc as the remedy of greatest importance. He considers it as one of the most appropriate means of diminishing irritation in the uterus, and as affording great relief to the pain, which, of all the symptoms, demands most attention. Lisfranc, however, does not approve of local bleeding. His views and those of many French surgeons are different from those which prevail among us and in England, with regard to this as well as other local remedies. Leeches or cupping or local baths are considered by them to promote congestion in the neighbourhood to which they are applied. Thus it is common in France to apply leeches to the feet where the head is affected. Lisfranc observes that leeches are applied upon the pelvis, in order to congest the uterus and recall the catamenia. It is hence improper to apply them where the object is to remove congestion and inflammation. In like manner hip baths

produce congestion, and are hence improper in a similar affection. The same remark applies of course to cupping as to leeches. Lisfranc observes that whenever he has been called in consultation he finds that these local measures have already been resorted to, and asks whether surgeons do not act unadvisedly in following a routine practice. Lisfranc brings the weight of his experience as proving the bad effects of this course and the favourable results of a different one. When one has a theory to support, however, or, what is the same thing, when he has adopted certain principles, he is very apt to make the results of his experience conform to them; so that these results should be received with some caution. The views of the surgeons whom Lisfranc refers to, are probably better founded than his own. They might reply, how can the application of six leeches, for example, upon the pelvis produce congestion in any organ so deep seated as the uterus? or how, indeed, can so trifling an action upon the superficial vessels affect the deep-seated ones? In cases of bruises or sprains we employ cupping or leeches applied as near as possible to the injured part, not merely with a view of producing congestion in the part, but, on the contrary, of unloading the vessels and allowing them to recover their tone. These are so frequently employed, that if either a small or a large number of leeches produced congestion and increase of pain, their use would very soon be abandoned. We know on the contrary, by every day's experience, that they afford great relief. The fact is, that local blood-letting acts only upon the superficial veins, and does not affect the deep-seated vessels. Local baths in like manner act upon the superficial vessels. They withdraw the action from the deep-seated parts to the surface. They stimulate the activity of the cutaneous vessels, and in this manner tend to relieve the congestion of those within. But though we deny the prejudicial effects of local treatment, we do not affirm that general blood-letting and baths may not in many cases be more beneficial. The local measures, however, are often applicable where the general ones could not be practised. While upon this subject we may state that Lisfranc does not deny their utility in some instances. Where the disease is of a chronic character he considers it sometimes desirable to promote congestion as a stimulus. For this purpose he employs local bleeding and baths.

Let us now consider his views upon general venesection. Venesection from the arm, it is said, is essentially revulsive, because it empties the uterine vessels. Depletive bleeding is seldom employed, unless the uterine action is so acute as to determine general reaction. The quantity of blood drawn in a revulsive bleeding varies from one ounce to four and even six ounces, according to the patient's strength. Four ounces would be revulsive in one not exhausted by previous sufferings, but it would be depletive to patients in the opposite condition. A small bleeding from the arm does not impair the patient's strength; it determines the blood to the supra-diaphragmatic region, and acts as a revulsive to the pelvic organs. These are the principles upon which Lisfranc employs blood-letting, as explained to us by M. Pauly. For the proper time for its performance and other particulars in regard to it, we must refer to the volume itself. These revulsive bleedings are, of course, frequently repeated.

Bathing is considered by Lisfranc as a valuable antiphlogistic remedy; but for this purpose it must be prolonged. A bath of from half an hour to an hour is a stimulant instead of an emollient; he therefore enjoins his patients to remain in the water from two to three hours, or even four, five and six hours, according to the effects of the bath and the strength of the patient. To avoid the wearisomeness when a bath of six hours is required, he divides it into one of three hours length in the morning, and one of the same duration in the evening.

Repose.—The observations on this subject are well worthy of attention. Absolute repose, in many diseases of the uterus, is considered essential by most practitioners. There are, however, some exceptions to the general rule. There are many women who cannot bear strict confinement—the nervous system becomes deranged—the digestion is disordered, and hence, as our author observes, all the symptoms become aggravated. It is, therefore, not only better, but absolutely essential, to allow the patient gentle and regular exercise. Absolute

rest must, however, be enforced as a general rule. Whenever walking causes pain, Lisfranc says, the rest of the treatment will be of no avail, unless the patient be subjected to perfect repose. Repose (in the day time) should not be taken in bed, for this heats and congests the pelvis; the patient should recline, not sit, upon a couch, and should be carried to and from bed. Upon the other particulars of treatment we need not dwell. The editor, at the end of this section, has furnished a formula by which, he tells us, Lisfranc generally commences treatment, and which he has himself distributed, or seen distributed, for nearly three years at the weekly consultation at La Pitié, under all circumstances except incurable cases. We can hardly recommend any formula, however sound the general principles may be on which it is founded, for the treatment of any class of diseases. Nor do we think that many authors will agree with Lisfranc in uniting uterine affections so closely, as the above remark shows that he has done.

For *pruritus* of the vulva, a small revulsive bleeding from the arm has often, it is said, a surprising effect; and this may be aided by a bath or by lotions. Lisfranc has always found it yield to a sulphurous fumigation.

Part III, is occupied with Menstruation, Leucorrhœa and Hysteria.

In cases where a number of years have elapsed beyond the proper period for the establishment of the catamenia, without their appearance, and the patient suffers from their absence, Lisfranc has found it of benefit to imitate nature, and supply the deficiency by small bleedings at the monthly periods. Dysmenorrhœa he has observed to be almost always hereditary.

Hysteria Lisfranc considers to consist most frequently in an irritation or slight inflammation of the uterus, combined with nervous phenomena. Occasionally, he allows it to be a simple neurosis. He has always found the uterus in hysterical patients, tender to the touch and in a state of turgescence, combined with hypertrophy.

Part IV, embraces the consideration of uterine affections, properly so called—Hysteralgia, erythemata, engorgement, amputation of the uterus, foreign bodies and the use of pessaries.

Hysteralgia, Lisfranc regards as sub-inflammation, unaccompanied by engorgement or by any other appreciable lesion. The treatment he employs is of course antiphlogistic, to which he adds narcotic remedies. But when it has become chronic, cupping and temporary blisters are applied about the pelvis; and douches at first externally, and afterwards with the jet directed upon the cervix itself. The cases which are given, however, form exceptions to the antiphlogistic course, for they were benefitted by quinine and by the acetate of ammonia; they were considered and treated as of a nervous character. Would it not be better, then, to confine the appellation—hysteralgia, to affections of this latter character, and give another appellation, if need be, to the sub-inflammation of the uterus? Whatever weakens the system, increases the irritability of this organ; and hence we shall generally find venesection and antiphlogistics increase, instead of diminishing the patient's sufferings.

Upon the success of Lisfranc's operation of amputation of the uterine neck, the editor, as we have already mentioned, differs seriously from his principal. We need not enter, however, into the details here, they having been given on a former occasion. (See the Number of this Journal for November, 1837, p. 179.)

In displacement of the uterus, Lisfranc has never employed pessaries as a means of cure. Though applied to daily, he has never failed, he says, in effecting a cure without mechanical means. He attaches not the slightest importance to it as a guide in the treatment, but regards it merely as a symptom of engorgement. Resolution of the engorgement is the first object, after which the organ returns to its place. In cases of a strongly marked chronic character, he thinks pessaries may be tried; but even here, they often cannot be tolerated.

We have been pretty free in the expression of our opinions, where we have differed from those given in the volume before us; but the greater the reputation of a practitioner, the fairer subject is he for criticism, and the more important is it to call attention to such of his principles as may be erroneous, or are even

doubtful. No one, however, can receive with indifference the opinions of such a man as Lisfranc. We esteem this book as a highly valuable one. We find in it much valuable matter that we cannot meet with elsewhere; its size, moreover, renders it readily accessible to the profession. The work of the translator has been ably performed. Dr. Lodge's residence in Paris and his familiarity with the French language, have qualified him well for the office he has undertaken. It is no slight recommendation of a translation to say that it is thoroughly English.

E. W.

ARTICLE XVII. *A report on the History and Causes of the Strangers' or Yellow Fever of Charleston. Read before the Board of Health.* By THOMAS Y. SIMONS, M. D., Chairman of the Board. Printed by order of the Board: Charleston, 1839, 8vo, pp. 23.

THIS is an interesting report, and we shall glean from it the principal facts which it furnishes.

The first appearance of yellow fever in Charleston was in 1690 or 1700. It has since occurred in 1703, 1728, 1732, 1739, 1745, 1748, 1753, 1755, 1792, 1794, 1795, 1796, 1797, 1798, 1799, 1800, 1802, 1804, 1807, 1817, 1819, 1824, 1827, 1828, 1830, 1834, 1835, 1838 and 1839. It will be perceived from this statement, that its visitations are exceedingly irregular. It prevailed with most violence in 1728, 1732, 1739, 1792, 1794, 1795, 1796, 1797, 1798, 1799, 1800, 1802, 1804, 1807, 1817, 1824 and 1838; a few cases occurred in 1803, 1805 and 1806, but the disease was not prevalent. The visitations of the disease have extended from July to November, but it was most rife in August and September.

The following table, constructed from data furnished in the report, exhibits the whole mortality of the disease, with the class of the population who were its victims, from 1817 to 1839 inclusive.

Year.	Total deaths.	ADULTS.			Strangers' children.	NATIVE CHILDREN.			BLACKS.		
		Male.	Female.	Total.		Under 14.	Between 14 and 18.	Total	Male.	Fem.	Total
1817	268	164	56	220		41	7	48	14	5	19
1819	172	130	24	154		11	1	12*	3	2	5
1824	236	160	32	192		33	3	36†			
1827	63	40	3	43	6	10	4	14	2	0	2
1828	26	21	3	24	1	1	0	1			
1830	29	23	1	24	4	1	0	1			1‡
1834	46	28	10	38	5	1	0	1			
1835	26	16	5	21		4	0	4			1‡
1838	353	281	30	310	11	16	1	17		4	4
1839	134	104	14	118	7	4	4	8		1	1

Dr. Simons invites attention to the small mortality among children from yellow fever. It will be seen from an examination of the preceding table, that the mortality under fourteen years of age is small compared to the whole mortality from the disease, and between fourteen and eighteen years of age still smaller; and Dr. S. asserts that natives over eighteen years of age are not known to sicken or die of the disease. Hence Dr. S. condemns the habit of some parents of estranging their children from the climate, from the fear of their taking

* Stated by Dr. S., in another place, p. 7, to be 18.

† Stated on p. 7 to be 44.

‡ Sex not stated.

the fever and dying. "If," he asks, "it is intended that their children shall live in a warm climate and in southern cities, why estrange them and render them more liable to the disease in adult age, when they are compelled to expose themselves to greater exciting causes?" This inferior mortality of the disease in children was also observed by M. Louis, to have occurred in the epidemic of Gibraltar of 1828.* Another fact is stated by Dr. S., which is also in accordance with the observations of M. Louis, viz. that the disease is less fatal among females than males. It will be perceived on reference to the table, that the mortality among the white males was more than five times as great as among the females. It is not a little curious that this does not hold true among the blacks. The numbers are, however, small, and the difference may be accounted for by circumstances with which we are unacquainted.

The fever of 1839 commenced earlier than usual. "On the 7th of June, three patients were admitted into the Marine Hospital, from the ship Burmah, which had arrived from Havana, of which I was informed by the physician of that institution. The pilot, contrary to the requisitions, that all vessels having sickness on board, should be brought to quarantine, improperly brought in this vessel. The remainder of the seamen on board, that were sick, were sent to the Lazaretto, and the ship was thoroughly cleansed and ventilated, being in ballast; she was in the stream, and did not come to the wharf for some weeks after, and had no communication, as far as could be ascertained with other vessels. On the 17th and 19th, cases were admitted into the hospital from the ships Chatham, Leonore and Elizabeth Bruce. The Chatham and Elizabeth Bruce were lying at Fitzsimons' wharf; the Leonore was lying in the stream, opposite these vessels, and had never been to the wharf; the Burmah was lying in the stream off Roper's wharf; the distance from each of the vessels was therefore considerable, and there were a great many vessels between, on board of which no sickness had as yet occurred. The Chatham arrived here from Boston, on the 5th of June, in ballast; the Elizabeth Bruce arrived in Charleston, from New York, the 7th of June, in ballast: and the Leonore sailed from Boston, and arrived on the 7th of June, in ballast—all of the crews were well. Subsequently, the disease occurred in different vessels in the harbour, which it would be unnecessary here to detail. Soon after the cases of the Burmah had occurred, a proclamation was issued by the mayor and council, requiring all vessels, arriving from infected ports, to be brought to quarantine: the vessels were there brought, their cabins cleansed, their holds ventilated, and their rotten fruit destroyed. No single case of fever arrived from the West Indies, or otherwise, in the city, that I am aware of, after this arrangement.

"The fever having occurred so early in the season, and so soon after its occurrence on board the Burmah, created suspicion of contagion in the minds of some, but I could not, upon the minutest investigation, come to that conclusion: and a committee,† appointed by the Medical Society, after making a minute and thorough investigation, came to the conclusion that the fever was not introduced by the Burmah, or by contagion, but was produced by the peculiar condition of our atmosphere; in other words, was endemic, and arose from causes among us.

"The following extracts I have taken, with the approbation of the chairman, from the report:

'By an examination instituted through reference to the captains and mates of the various vessels, whose information was given from the log books, your committee have ascertained that they had, at the time of their sailing from the different ports, viz: Liverpool, Boston, and New York, for this port, perfectly healthy crews, with sound cargoes, incapable from their character of generating foul air. That there was no malignant disease prevailing at the time of their departure; that their crews had not, while in this port, any communication, either direct or indirect, with the Burmah or her crew: and, finally, that

* See p. 292 of this Number.

† The Committee consisted of Dr. A. Lopez, chairman, Drs. James Moultrie, E. Geddings, J. M. Campbell, Henry Winthrop, and the president, J. E. Horlbeck.

that ship, in all these instances, lay in the stream, from a quarter to half a mile from them, except for a short period, of which mention will hereafter be made.'—p. 5.

"Again: 'The presumption is thus fairly induced, that the cleansing and ventilation must have disinfected her (the Burmah) sufficiently of her foul atmosphere for purposes of safety, *else why none other of her crew remaining on board* THENCE TO THE TIME OF HER DEPARTURE FROM OUR PORT, CONTRACT THE DISEASE?'—p. 7.

"Again: 'Thus far your committee have satisfied themselves, that the transmission of the fever through the agency of the Burmah, is neither tenable as to fact, nor in accordance with the opinions of a great majority of the medical profession in this country,'" &c. &c.—p. 8.

"Again: 'Your committee therefore are of opinion, that the Yellow Fever which has prevailed, and still continues this season, has its origin, not from contagion derivable from those cases imported in the ship Burmah, on the 6th of June last, but from local and general causes.'—p. 10.

"It must be here remarked, that the month of June was uncommonly hot; and the whole of this summer was remarkable for the great drought, as well as high temperature. All our southern country experienced the same weather, and the principal cities south of Charleston have been invaded with Yellow Fever. At the latter portion of this year, a fever of the duration of twenty-four to forty-eight hours, affecting the head, the jointst the spine, very severely, occurred among natives and strangers; and as soon as it began to prevail, the Strangers' Fever diminished: this fever resembled the Dengue, and from the intense pain in the joints, was commonly called the Broke Bone Fever. It in no instance proved fatal.

"I have been thus particular in the history of the commencement of the disease this year, because from the coincidence of circumstances, it might be supposed that the fever prevailed either by infection or contagion."

Disbelieving, for the reasons just given, that the disease was introduced by importation, Dr. S. next proceeds to inquire, what were the causes of the fever?

As a preliminary to this inquiry Dr. S. offers the following observations: "Wherever Strangers' Fever occurs, the heat is extremely high, ranging 85 degrees on an average in the twenty-four hours, and sometimes higher. But altitude of temperature will not alone produce it, or any fever, it must be associated with moisture, at least such is my opinion, and Baron HUMBOLDT gives this as the result of his observations in South America. From meteorological observations it would seem that sometimes the disease occurs after heavy rains, and in many cases where there is great want of rain, as this season for instance, and a high temperature. Now many would be induced to suppose that the atmosphere from the want of rain is dry. But this is not so, our meteorological observations give us but little light on this subject, but from my own observations, I have remarked that the dews are heavy and the air chilly at night, and that cloths and leather become mouldy. Brasses can hardly be kept clean, and steel quickly rusts. The continued solar influence in the surrounding water causes an immense evaporation, which ascends high, and after the sun declines, begins to descend in the form of dew, in which I believe malaria floats. There is another fact, that in seasons when Yellow Fever prevails, there is very little of thunder and lightning."

Dr. S. next considers the local causes, and first the docks and wharves. The latter, he states, "are formed by the palmetto logs, and filled up with wood, stone and earth. In the docks a great deal of mud, with decomposed vegetable and other materials, are thrown up by the tide, and at low water the exhalations are offensive, independent of this in some wharves the drains pour out their contents. Now this condition of things, with the fact, that Strangers' Fever most generally occurs among the shipping, has induced many to believe it arises from this cause. That it may like others be a predisposing cause, for all offensive effluvia of this character must depress the nervous system and lessen the vital powers to resist morbid impressions, is highly probable, but it cannot be the active cause, for if it were so, Yellow Fever should occur every

year, which is not the case, and the same may be said in relation to the drains and other local causes as the formation of new streets. It is very probable that other causes than the condition of the docks contribute to the disease occurring first among seamen."

With regard to marsh miasma as a cause, Dr. S. remarks: "From the old maps it is evident that Charleston was intersected by marshes and creeks, which are now filled, and houses built thereon. At present the city is surrounded by marshes, through which the salt water ebbs and flows. But we find that the islands (Morris and Sullivan's), on which are extensive marshes, have been considered safe retreats from the influence of this disease; and in Hampstead, the settlements near the marsh have been regarded as equally exempt; the fevers also which occur in certain situations of Sullivan's Island, and near the marshes, are obviously distinct in character from the fever in Charleston, and likewise it may be said of the fevers in the country. It has been supposed that these fevers are mere modifications of each other; but this I regard as a mistake. The diagnostics between them I will give, merely with a view of sustaining the position that yellow fever is endemic to warm climates; where there is also the dense population of a city, and that it differs from the fevers arising from marsh miasma where there is not a city population. The yellow fever has but one paroxysm, which lasts from two to three, and sometimes four days—that is to say, the fever is continued until then; it then subsides, or rather ceases, and new symptoms present themselves. If the case is bad, black vomit ensues at this time—which is a very bad, though not always a fatal symptom; or the patient dies without it, generally, on the fourth or fifth day, although it is sometimes of longer duration; or the individual becomes convalescent. Again: once having the yellow fever, like the small pox, the individual having it is not liable to another attack, as a general rule, for there are some exceptions, although rare in both cases, while of the fevers contracted in the country, one attack in place of causing exemption, renders the individual more susceptible and liable to another. Although the marsh miasma cannot be considered as the essential cause, yet it cannot be doubted, where the tide is but partially flowed, intermingling salt with fresh water, and becomes stagnant, a very noxious exhalation, injurious to health, must result. There is, besides, another evil. Small houses are erected on some of these tide lots, which are but partially filled up, and then oftentimes with heterogeneous materials, is not only a serious nuisance, but must necessarily be deleterious to health. Another circumstance I may here mention, is worthy of consideration, viz. the disposal of the offals of our city. It is obvious, that if the law requires the citizens to remove all the rubbish and offals from their residences, regarding them as nuisances, the concentrating them upon one spot, for the purpose of filling up streets made on our marsh lots, must be infinitely more pernicious and injurious, as well as improper.

"How far some of the causes I have mentioned operate in producing fever, it is not my intention at present to discuss. I shall only remark, that there is a peculiar condition of the air, independently of the causes already mentioned, for these causes exist every year, but do not produce the disease regularly. The exact nature of that condition of the air we do not understand; it has as yet eluded the researches of philosophers, chemists and physicians, and may prove beyond the ken of human wisdom to discover. The nature of malaria and the laws of epidemics, are puzzling problems in medical research; we have had many speculations thereon, but nothing proved as yet. Thus far we do know, however, that a city asmosphere is necessary to generate yellow fever; and it is a wise system of medical police, that all causes which may, by a possible contingency, prove agents in producing disease, should be removed. Hence the cleansing of the docks at a proper season, the preventing of exhalations from the drains, and the clearing them out in the winter season, or when necessary; the carrying of scavengers' offals beyond the precincts of the city, or obviating their deleterious influence by preventive means; keeping the streets, as well as the yards, clean; draining and filling up low lots; having all the cellars kept dry, and properly ventilated; prohibiting of any more cellars; burying the dead be-

yond the precincts of the city; and the introduction of a plentiful supply of pure water; these measures, if they can be accomplished, constitute, in my opinion, judicious and important preventive means; and having thus used all human means, according to our finite attainments, we must leave the rest to a supreme and higher power."

The conclusions at which Dr. S. has arrived as to the causes of epidemics, as expressed in the preceding quotation, are sound ones. Those causes have as yet escaped our researches.

ARTICLE XVIII. *A Report on the Origin and Cause of the late Epidemic in Augusta, Ga.* Submitted to a meeting of the physicians of Augusta on the 10th December, 1839. Augusta: 1839, pp. 30.

THIS report was drawn up by a committee, consisting of Drs. F. M. ROBERTSON, J. P. GARVIN, and P. F. EVE, appointed at a meeting of the physicians of Augusta, to inquire into the origin and causes of the late epidemic in that city. This committee appear to have performed their duties zealously, industriously, and in good faith; and this merit must be accorded to them even if conviction be not yielded to the correctness of *all* their conclusions. They were appointed to make a discovery, and they seem to have set about it with a determination to effect it, in full confidence of success, and without any suspicion that the object after which they sought might be one of those which have hitherto eluded all human research.

The committee commence with an examination of the question, whether the epidemic was introduced from foreign sources; and after disproving the various explanations offered of its introduction, and showing that it was not of a contagious nature, they next discuss the local causes to which it has been ascribed; and finally, point out that to which they think it owes its origin. This was a large accumulation of vegetable and animal matter at the upper "trash wharf."

They state that in April, 1834, the street committee was authorised "To have made a slide or platform, on the river bank, for the purpose of throwing the dirt and rubbish collected by the street officer, clear of the bank into the river. The platform was erected on piling; it projected one hundred and ten feet into the river, from the edge of the bank, and was forty-five feet high, from the bed of the river. The street officer's carts, laden with all the animal and vegetable matter, collected from the different lots and yards of the city, daily, were drawn to the end and sides of this platform, and emptied into the river. The dead animals found in the city were also thrown from the same place. Thus commenced this accumulation in 1834. The street committee, for some time after the construction of the work, was in the habit of having this collection cleared away, down to the water's edge whenever it accumulated above it. This precaution was, however, finally neglected, and an old boat lodged against the work, which prevented the water from sweeping under the platform, and the mass was suffered to accumulate to upwards of 200,000 cubic feet, when it attracted the notice of numerous citizens and the city council. It had arrived to such a height that the workmen, who commenced levelling it in May last, could step from the platform on to the mass."

In April, 1839, the committee on the river bank and wharf were instructed "To have the trash in front of the street officer's wharf removed, and make arrangements to prevent its accumulation there in future. On the 4th of May following, a contract was entered into with Mr. Spencer for the performance of the work. On the 8th of the same month, he commenced operations, and finished on the 29th. The removal was only partial. It consisted in levelling the mass by horizontal sections, and throwing it into the river as far as it could be done. A further levelling was made by the same individual between the 26th of June and 2d of July. During the operation of the workmen on the mass, as they penetrated deeper into the interior, *the heat evolved was so great that they were*

compelled to desist from their work, for two hours at a time, so as to suffer it to cool sufficiently to enable them to resume their labour, although they wore thick shoes.

"After the operations, under the direction of the river bank committee had ceased, there still remained, of the original accumulation, exposed to the influence of the sun, upwards of 117,000 cubic feet, which had been concealed by the superincumbent mass for years, and now, for the first time since its deposit, saw the light of day."

The committee remark, that did the limits of their report permit, they "could cite numerous instances in which similar accumulations have produced the most malignant forms of fevers." This will certainly not be questioned, and if the epidemic had been a malignant remittent, or intermittent fever, the mass of filth described would be regarded as fully competent to its production. But the committee at the commencement of their report, state, that though the nature of the late epidemic was not included in the investigations assigned to them, yet they deem it important to say, "that the medical practitioners of the city are *almost* unanimously of the opinion, that it was *yellow fever*." It is greatly to be regretted that the committee did not enter into this investigation, and furnish the facts upon which the opinion they express, as to the nature of the epidemic, was founded, and this would appear to be the more necessary, since the report itself contains some statements not entirely favourable to that opinion. Among others we may quote the following:

"About the 8th of June, several severe cases of fever occurred in Mrs. Thomas Gardiner's family, at her residence, fronting on the river bank and Lincoln street. *They were considered, at the time, as cases of ordinary remittent fever.* But, as the family had, in previous seasons, been exempt from diseases of this nature, at so early a period, and as facts, in another part of this report will clearly show their origin, your committee feel no hesitation in stating the belief that these cases arose from the same cause, though in a less virulent state, that produced the prevailing epidemic."

That the same miasm which produces remittent fever can, in its more virulent state, excite yellow fever, or, indeed, that this last is of paludal origin, is what, in the present state of our knowledge, we certainly are not justified in admitting.

The subject requires and perhaps admits of some further elucidation, and we trust that one of our correspondents will furnish us with such facts as may tend to that purpose.

ART. XIX. *Report of* THOMAS LAWSON, M. D., *Surgeon-General of the United States Army, communicated by the President to the two Houses of Congress, at the Commencement of the First Session of the Twenty-Sixth Congress.* Washington: 1839.

THIS is an extremely interesting document, and we take pleasure in inviting attention to it.

The whole number of cases under treatment during the year ending 30th September, 1839, was 22,849; of this number, 22,248 were new cases, and 649 remained from the preceding year. Of the whole number of persons reported sick, 21,940 have been restored to duty, 131 have been discharged the service, 55 have deserted, and 214 have died, leaving on the 30th September, 1839, 909 still on the sick report.

The following table shows the prevalent diseases, and their respective mortality.

DISEASES.	No. of Cases.	No. of Deaths.	DISEASES.	No. of Cases.	No. of Deaths.
Intermittent Fevers	3761	6	Catarrh	1908	0
Remittent Fevers	756	45	Cynanche	266	0
Synochal Fevers	97	0	Cholera	206	0
Typhus Fever	13	6	Colic	340	0

DISEASES.	No. of Cases.	No. of Deaths.	DISEASES.	No. of Cases.	No. of Deaths.
Acute Bronchitis	107	0	Gastritis	79	3
Pneumonia	104	7	Enteritis	36	4
Pleurisy	171	1	Diarrhœa	1462	26
Phthisis	70	22	Dysentery	1188	20
Hepatitis	52	0	Nyctalopia	53	0
Rheumatism	1029	1	Dropsy	28	7
Ophthalmia	329	0	Scorbutus	111	6
Gonorrhœa	374	0	Ebriety	354	7
Syphilis	269	1	Hernia	33	0
Epilepsy	53	4	Wounds and Injuries	2377	13
Apoplexy	5	3	Ulcers and Abscesses	1077	3
Delirium Tremens	43	6	All other Diseases	3683	23

"From the monthly returns and other reports it is estimated," says Dr. L., "that the aggregate mean strength of the army for the last year was 8950; and as the number taken sick during the year was 22,248, and the aggregate of deaths was 214, it will appear that the proportion of cases of disease to the number of men in the service, was as $2\frac{1}{2}$ to 1 or 249 per cent.; the ratio of deaths to the number of men as 1 to 42, or $2\frac{4}{10}$ per cent.; and the proportion of deaths to the number of cases treated as 1 to 107, or a fraction less than 1 per cent."

This is an extremely small mortality, and will be the more striking if we compare it with that in the British army. Mr. Marshall,* Deputy-Inspector General of Army Hospitals, gives the following as the ratio of deaths per cent. of the mean strength in the commands subjoined.

Station.	Period of Observation.	Ratio per cent.
Ireland, - - - -	32 years, from 1797 to 1828,	1.5
Bengal, - - - -	9 years, from 1816 to 1824,	5.5
Madras, - - - -	do. do. do.	5.6
Bombay, - - - -	do. do. do.	4.3
Windward and Leeward Islands,	19 years, from 1810 to 1828,	11.3
Jamaica, - . - -	do. do. do.	15.5

The troops which have taken the field from southern stations, have suffered less from sickness, Dr. L. states, and lost fewer men by disease since they came into Florida, than while they were stationary at their posts. "Nor have the corps," he adds, "from the north suffered from disease and death to the extent that is generally believed."

"The reports in this office from every section of the United States show this result, and as I am satisfied of the fact, I deem it to be my duty to correct an error of opinion that seems to pervade the country, to the manifest injury of the military service." In illustration of this, the following table is given:

"*Table showing the relative proportion of disease and mortality among the troops serving in Florida and those stationed at the prominent posts in other districts of the United States, during the year terminating the 30th of September*, 1839.

District of observation.	Mean strength.	Cases.	Deaths.	Ratio of mortality, per centum of mean strength.	Proportion of deaths to the number treated.
North and east,	1,900	4,787	37	2	1 in 129
North-west,	1,220	2,762	11	0.9	1 in 251
South-west,	1,461	4,622	65	4.3	1 in 71
Florida,	3,092	6,510	73	2.4	1 in 89

* Edinburgh Med. and Surg. Journal, Oct. 1837, p. 318.

"With the view to attain the nearest approximation to a correct result in regard to the climatorial influence of different regions of our country, all deaths that come under the class of casualties, have been excluded in this table. As the quarterly reports of sick in Florida include, independently of the regular troops, a few volunteers, sailors, and labourers employed in the Quartermaster's department, it has been found, in a few cases, impracticable to make an exact separation. The deaths given, however, are entirely confined to the regulars. In regard to the invalids sent out of Florida, it is ascertained that the ratio of mortality is not materially affected from this cause; for, during the present year, no more than fifty-four were carried to the north; and of these, two only, one of whom was excessively intemperate, died."

The high standard of merit required for admission into the medical staff has been, it is stated, rigidly enforced.

"Two junior surgeons, whose examination for promotion had been unavoidably deferred, and three assistant surgeons of five years' standing, were ordered to present themselves, and thirty-six applicants for appointment to the medical staff of the army, were invited to appear before the medical board lately in session at New York. The surgeons and assistant surgeons having undergone a thorough examination upon all the branches of medical science, and received a favourable report from the board, the first two were sustained in their advanced position, and the last three rendered *legally* qualified for promotion. With the candidates for admission into the army, however, the result of the examination was very different. Of the thirty-six who were invited to appear before the board, twelve declined the examination, (two after having reported to the board,) two were excluded on account of their age, and twenty-two were examined; and of these last, five only were found to possess all the qualifications essential to an appointment.

"It may be that we have erected too high a standard of merit—that too much is exacted from the human intellect; we are not conscious, however, that more has been asked than ordinary talents, a good primary education, and the actual study of the science of medicine can attain. At all events, some few have reached the highest scale of excellence; and while as many of these choice spirits can thus be secured, as will fill our ranks in each succeeding year, we shall not relax in our requirements upon those who claim to be admitted into the medical staff of the army.

"But to account for the humiliating results of the examination on the present and on former occasions, we have only to look to the system of education which now obtains in the country.

"The facilities of acquiring medical knowledge, or rather of becoming professional men, are so great, that many persons are seduced into an attempt to become physicians, without the basis of an education. There are others again, who, having received a good primary education, and also passed through a regular classical or collegiate course, (and thereby rendered qualified for scientific pursuits,) are induced, from motives of economy and convenience, or with the view of sustaining institutions of their own state, to enter some of the small medical schools, where they cannot possibly have the advantages of anatomical dissection, (the groundwork of the profession,) or the means of clinical instructions upon an extended scale. A knowledge of the science of medicine is not, like divinity and law, to be acquired by reading books in the closet and listening to the reading of a course or two of lectures; it can only be attained by seeing and feeling, in connection with the knowledge acquired from books.

"The great multiplication of medical schools in every section of the country, together with the proverbial facilities of becoming licensed practitioners, has so lowered the standard of professional excellence, and so manifestly degraded the medical character of the United States, that the present system will be, it is to be hoped, by a more enlightened public opinion ere long put down. The interest of the country is so much divided by these various institutions, and the patronage to each is consequently so small, that many of our ablest medical men will not accept places in them; were it practicable, however, for the professors

to obtain adequate compensation for their services, it would be impossible to find professional men enough of talents and attainments to occupy the several chairs in the innumerable medical schools in every town, village and cross-road place throughout our states and territories."

This statement, relative to the influence of the excessive multiplication of schools and extreme facility of obtaining diplomas in this country, in degrading the standing of the profession, is, we are convinced, in no respect exaggerated. In our preceding Number (p. 249), we ventured to express similar views, and the correctness of those opinions must now be considered as confirmed beyond cavil, sanctioned as they are by those of the Surgeon-General, whose ample opportunities for observation, and station, place him beyond the suspicion of any bias or prepossession, and whose conclusions must be received as flowing from a sober and careful observation of the influence of the existing condition of things.

Dr. L. has had prepared "a meteorological register, embracing thermometrical observations for a series of years, in every section of our states and territories; also, a report on the vital statistics of the army and the medico-topography of the military stations, extending over a period of twenty years; all which will be ready for the press in a few days, should their publication be authorized by Congress or by the Department of War."

We shall look forward with great interest to the appearance of this report.

ART. XX. *Animal Mechanism and Physiology, being a Plain and Familiar Exposition of the Structure and Functions of the Human System. Designed for the Use of Families and Schools.* By JOHN H. GRISCOM, M. D., Professor of Chemistry in the New York College of Pharmacy, and Lecturer on Animal Mechanism and Physiology. Illustrated by Numerous Wood-cuts by Butler. New York: 1839. Harper and Brothers, 12mo. pp. 357.

IF the rising generation be not imbued with a knowledge of Anatomy and Physiology, it certainly will not be for the want of the means and appliances for the purpose. Within the period of five years, no less than three original works on these sciences, designed for the use of schools, have appeared in this country. The first was the Outlines of Physiology by Dr. Hayward. Of this we formerly expressed a favourable opinion, (See No. of this Journal, for Feb. 1835, p. 463,) and we now again call attention to it, because it has the merit of leading the way, and, further, because the authors of the more recent works have, it seems to us, been deficient in candour, in avoiding all reference or allusion to it.

The next that appeared was the Physiology by Dr. Lee. This we noticed in our preceding Number, (p. 180.)

Finally, we have to introduce to our readers the work the title of which is at the head of this article. This differs in its scope and plan from its predecessors. With a view of rendering the study of Anatomy easier and more agreeable, Dr. Griscom considers the human frame as a *machine* composed of apparatus of various kinds, acting upon well known philosophical and mechanical principles; and the aim of the author is to illustrate the functions of the organs by the laws of Chemistry, Hydraulics, Hydrostatics, Pneumatics, Mechanics, Optics and Acoustics. This mode of teaching the subject has been very successful in the hands of Sir Charles Bell and Dr. Arnott; and Dr. Griscom has certainly prepared a volume well calculated to interest and instruct youthful minds.

ART. XXI. *The American Medical Almanac for* 1840, *Designed for the Daily Use of Practising Physicians, Surgeons, Students and Apothecaries. Being, also, a Pocket Memorandum and Account Book, and General Medical Directory of the United States and the British Provinces.* By J. V. C. SMITH, M. D., Editor of the Boston Med. and Surg. Journal. Vol. 2; Continued Annually. Boston: 1840. 12mo. pp. 152.

THIS is a useful little volume. It contains brief notices of the Medical Colleges, Medical Societies and Hospitals in the United States; a list of the Medical Journals at present published; several short but interesting papers: one on the laws of human mortality and another on the statistics of consumption, by Mr. Shattuck; one on the application of remedies to the external parts of the body and a second on the immovable apparatus for the treatment of fractures, by Prof. Warren; a very interesting account of the Medicinal Springs of Virginia, by Dr. Hayward; a formulary of prescriptions, &c., &c., &c.

There is a paper, on the Mortality of Prisons, which we indicate also, merely to put the reader on his guard against the erroneous views which are endeavoured to be promulgated in it. It is sufficient to state that the author is a violent partizan—a bitter opponent of the Pennsylvania Penitentiary system—one who is so blinded by his zeal as to be incompetent for that calm examination of the facts which is demanded for the attainment of truth.

There are some errors in the volume which we have observed with regret, but it is perhaps not possible to arrive at entire accuracy in a work of the kind. With due care, the future volumes may be rendered annually less and less obnoxious to criticism in this respect.

ART. XXII. *Report of Experiments on the Action of the Heart.* By C. W. PENNOCK, M. D., Physician to the Philadelphia Hospital, Blockley, and E. M. MOORE, M. D., late Resident Physician to the Frankford Asylum. Read before the Pathological Society of Philadelphia, October 28th and November 4th, 1839. Philadelphia: 1839. 8vo. pp. 18. (Extracted from the Medical Examiner, No. 44.)

THIS is a highly valuable contribution to physiology. To those who are acquainted with Dr. Pennock, it is unnecessary to state that the experiments have been conducted with the utmost care, and are reported with perfect fidelity, and further that they have been executed on the most liberal scale as regards expenditure. To others, the valuable papers communicated by him to this Journal,* more especially his Experiments on the Efficacy and Modus Operandi of Cupping Glasses in preventing and arresting the Effects of Poisoned Wounds†; his Account of Malignant Pustule‡, and Description of a Case of Anomalous Aneurism§; with the splendid plates illustrating the two last, which were executed partly at his expense, will bear sufficient testimony that such is the fact.

Before detailing the experiments, which we shall do in the reporter's own words, we must premise that the stethoscopes used were flexible, constructed of a coil of wire, covered with gum elastic and silk; one about four feet long, the ear-piece and hollow cone for the reception of sound, being of horn; the other about two feet long, the ends composed of block-tin, and smaller than the first. This instrument the experimenters state to be essential to the success of the experiment, as the impulse is so great with the ordinary stethoscope, as to render the analysis of sound very uncertain. In measuring the heart, the ordinary shoemaker's measure was used. Artificial respiration was maintained by the bellows, at eighteen to twenty inflations of the lungs per minute.

* See Vol. II, p. 10; Vol. X, p. 319; Vol. XIV, p. 347; Vol. XV, p. 364; Vol. XVI, p. 94; Vol. XIX, p. 13.
† May, 1828. ‡ Nov. 1836. § Nov. 1838.

"*Experiment* 1.—A ram, about one year old, was selected. Owing to th alarm of the animal, it was found extremely difficult to ascertain the natura pulse and respiration; but during the time he was most quiet, the former range from ninety-six to one hundred and eight per minute, and the latter from thirt to forty in the same time. The stethoscope, applied to the left side of the chest opposite the fourth rib, revealed the sounds of the heart distinct and normal but faint. Upon the sternum, in the same line, they could scarcely be distin guished. The animal was then deprived of sensation by several blows upon th anterior portion of the cranium; and the bellows-tube being immediately in troduced through an incision in the trachea, respiration was artificially sustained An incision was then made down upon the sternum, and extending its whol length, with a knife whose edge was purposely roughened to prevent hæmor rhage. The bone was then divided longitudinally by a saw, and its parts sepa rated by hooks, thus presenting a cavity of six or eight inches in diameter Ten minutes had elapsed from the time the blow was given until the chest wa opened, but the heart was still observed to beat irregularly and very rapidly The excitement, however, soon subsided, and the heart pulsated regularly, an with a frequency of ninety-six per minute. The stethoscope was first applied to the heart—the pericardium being still unopened—and the sounds were ob served to be of the same character as previously observed, but much louder The first sound appeared to occupy about one-half of the whole time of a pulsa tion; this was followed by the second, which is about one-half as long as th first, or one-fourth of the whole, and is more flapping than the first; the remain ing time is occupied by repose.

"The head of the auscultator being averted, and his eyes closed, the end o the stethoscope was applied by an assistant to the base near the valves, and t the body of the heart alternately; and it was decided by each in succession, tha the first sound was louder over the body of the ventricles than near the valves while the second sound was much more distinct near the valves, than over th ventricles elsewhere. The change, however, modified the second sound much more than the first. A portion of the lungs being interposed, we found the sounds duller, but in other respects of the same character. The anterior portion of the pericardium was then removed, and the heart exposed, presenting the right ventricle and auricle, and a small portion of the left ventricle, the auricle being concealed behind the heart. During the ventricular systole, the righ ventricle was observed to be flattened, and the finger and stethoscope being applied, the first sound and impulse occurred at the same time. During this contraction, the base of the heart revolved for a short distance to the left, sup posed to be about one-sixteenth of a circle, while the apex turned to the righ at the same moment, thus causing the heart to assume a spiral form during the systole. The transverse diameter was much diminished by this systole; during diastole, it increased and the heart assumed a rounded appearance. The stetho scope was again applied in the same manner as heretofore detailed, and with the same result. A comparison being instituted, with the head averted as before, between the character of the sounds over the right and left ventricle, it was unanimously conceded, that on the right, the first sound was flapping and shorter than on the left, while on the latter it was prolonged and rushing. Such was the rapidity of the heart's action, that some difference of opinion existed with reference to the relative contraction of the auricle and ventricle. Drs. Pen nock and Wood being of the opinion that the ventricular systole is immediately followed by the auricular contraction, which is synchronous with the ventricular diastole; or to detail the succession more accurately, we have, 1st, the systole of the ventricles occupying one-half of the whole time, during which systole the auricle dilates; 2d, immediately at the termination of the systole, the auricle contracts, and the ventricle dilates synchronously, occupying one-fourth of the whole time; 3d, the state of repose follows, in which the ventricle is full, occupy ing the remaining time. Dr. Pennock is of the opinion, that the auricular con traction occupied rather less time than the period of repose. Dr. Moore coincides with the opinion, except in not considering the emptying of the auricles, during

he diastole of the ventricles, the result of active auricular contraction, but of simple distension, relieved by the diastole of the ventricle, and thinks he perceives a contraction of the auricle at the termination of repose, immediately preceding the ventricular systole. The first sound, impulse, and ventricular systole, were synchronous. There was, however, an appreciable difference between the contraction of the ventricles and the pulse, increasing as the distance from the heart was greater. The pulse varied from eighty-four to ninety-six, becoming irregular when the artificial respiration was omitted or too rapid.

"The heart pulsated two hours after opening of the chest.

"*Experiment* 2.—A ram, about a year old, whose pulse was irregular, but seventy-eight per minute, was selected for the experiment, on account of the slowness of the heart's pulsations, which facilitates the analysis both of the sounds and motion. Sensation was destroyed by blows upon the head, as in the preceding experiment, and the chest opened as before, but the heart beat feebly and irregularly, being congested, and expelling but a small portion of its contents. The sounds were feeble over the right ventricle, (not observed over the left,) and the second soon disappeared entirely; but the first sound remained, whilst the heart contracted, which ceased to beat in a short time.

"*Experiment* 3.—A ram, six months old, was chosen; pulse, 102; respiration, 32. Was struck upon the forehead anterior to the horns. Some difficulty was experienced in introducing the tube connected with the bellows, and in opening the chest. Fifteen minutes elapsed before the heart was exposed. It was found congested and its action irregular. The sounds were more feeble and the heart contracted less forcibly than in the first experiment, but the coincidence between the impulse and the ventricular systole was the same, as were also the spiral motion, the peculiar character and succession of the sounds, as well their comparative intensity at the base and body of the heart. Suspecting from the experiments of others, as well as from the facts we had observed, that the semilunar valves were concerned in the production of the second sound, we attempted to elevate them by hooks introduced into the aorta and pulmonary artery, and note the effect upon the sounds. In consequence of puncturing the artery, hæmorrhage succeeded, and we failed in our purpose. The heart, while still beating, was removed from the body, and the stethoscope applied to the ventricle. It continued to contract many times while in the hand, and during contraction, a sound resembling the first sound was heard, differing only in being more feeble. But one sound was heard. The ventricles were then slit upon longitudinally, and emptied of blood, and the same sound was elicited. Pulse fell at one time to 84 per minute. Heart beat three-fourths of an hour.

"*Experiment* 4.—A ram, about a year old, was opened as in experiment third. Our attention was now directed exclusively to raising the semilunar valves, but without success. The heart was again removed as in former experiment, the ventricle and right auricle cut open, and emptied of blood, and the fingers thrust into the apertures, thus elevating the tricuspid and semilunar valves. A sound precisely similar to that in the last experiment was detected, but less intense.

"*Experiment* 5.—A ram, about a year old. We administered two drachms of Allen's Prussic Acid, containing ten drops of the pure acid. Spasmodic breathing was induced in a few seconds. At the expiration of one minute and a half, the trachea was opened; and respiration established at the end of two minutes. Immediately upon cutting through the integuments, no blood was observed to flow. At the end of four minutes, the heart was exposed, but perfectly motionless and enormously distended.

Experiment 6.—The animal, an ewe, one year old. Deprived of sensation as before. Opened in fifteen minutes. Heart contracted irregularly at first. Same character of first and second sound; same relation of pulse, impulse, and ventricular contraction, and same comparative character of sounds upon the left and right ventricles as in first experiment. Heart did not contract vigorously as in first experiment, and when the right ventricle beaome congested, the second sound disappeared over it. The contractions of the two ventricles were also synchronous, The heart being allowed to rest upon the collapsed lungs, the

apex was not observed to rise. The heart during the contraction of the ventricl diminishes transversely, but elongates about one-fourth of an inch, as measure from base to apex. We again failed in elevating the valves. The heart wa removed as in experiments three and four, with the same results.

"*Experiment* 7.—As those experimenters who had preceded us had found greater success upon the calf, we procured one about nine days old. It wa deprived of sensation by a blow upon the occiput. Some difficulty was experi enced in opening the trachea, and two minutes had elapsed before artificial respi ration was commenced; and upon opening the chest, life was extinct; a few ver feeble contractions being observed in the right ventricle.

"*Experiment* 8.—A calf, five days old, pulse one hundred and thirty; respira tion thirty-two. Both sounds heard distinctly through the chest. The anima was struck upon the forehead, immediately above the frontal sinus. The ches opened as in first experiment. Same spiral motion observed during contraction The elongation at the same time one-fourth of an inch, as measured from unio of aorta and ventricle to the apex. The whole heart has an apparent motio from the base towards the apex, and the pulmonary artery turns partially aroun the aorta, which is a fixed point, describing about the arc previously mentioned The same flattening of right ventricle during its contraction as before observed When the stethoscope was placed upon the aorta, two inches above the valves both sounds were heard, but the second sound much louder than the first. Ove the pulmonary artery both sounds were faint, but especially the second, whic disappeared as the heart became feeble. A curved needle was passed into th aorta, but the sounds were indistinct, and the second appeared to be absen sometimes, and not at others, when the hook was in the artery. Upon exami nation after the removal of the heart, it was found that the valves were some times elevated, and at others not.

"*Experiment* 9.—Experiencing great difficulty in analyzing some of the movements and sounds of the heart in animals of the size upon which we had experimented, we resolved to inspect the heart of a horse, in which the pulse in health ranges from thirty to forty per minute. In this experiment we were assisted by Drs. Gerhard, Stewardson, Peace, Hardy, Fell and Goddard, but to the latter gentleman especially, we owe our thanks for the assistance rendered.

"We found in the animal we had selected, that the pulse was about thirty-six per minute, and respiration twenty-eight in the same time.

"In order to prolong life, the trachea was opened before the blow was given. Immediately after the blow was struck, which was directed to the forehead, that the skull might be depressed upon the anterior lobes of the brain, the bellows-tube was introduced, and artificial respiration commenced. The skin was dissected back from the median line upon the thorax, the cartilages of the ribs sawn through upon the left side of the sternum, and several of the ribs cut off about one-third of their whole length from their sternal extremity. On account of the hemorrhage, we were obliged to secure many arteries, and twenty-five minutes had elapsed from the time the blow was given until the heart was exposed. It presented the left ventricle, the appendix of the left auricle and a portion of the right ventricle. The pulsations were one hundred per minute, but on account of its size we were enabled to observe the relative contraction of the auricle and ventricle, which we found to succeed each other as follows:—During the contraction of the ventricle, the auricle dilates; at the expiration of the systole, the auricle contracts, and the diastole of the ventricle commences, the auricular contraction apparently occupying about one-half the time of the ventricular diastole. During its systole, the left ventricle flattens and elongates. During its diastole it shortens, and assumes a rounded form. The sounds were detected, but not loud; the second not existing over the pulmonary artery, but heard over the body of the left ventricle.

"Death arrested the further progress of the experiment, twenty minutes after the chest was opened. Dr. Moore coincides with the other gentlemen in reference to the relative contraction of the auricle and ventricle, and thinks his observation in Experiment 1, erroneous.

"Although every experiment had confirmed our views of the agency of the alves of the aorta in the production of the second sound, we had heretofore iled in elevating them; we were also still doubtful respecting the relative ontraction of the auricle and ventricle, for, although the last experiment had ppeared more satisfactory on this point than several of the preceding, yet, as fe continued but a short time after opening the thorax, and as many circumances unfavourable to clear and calm observation were connected with the xperiment, we resolved to pursue the investigation of these obscure points, and exhibit the facts that we had observed to a few medical friends.

"*Experiment* 10.—A ram about six months old, pulse ninety-six. Deprived f sensation by a blow upon the head, and opened as in Experiment 1. The eart contracted well, but exhibited great irritability when touched. Its pulsaions rose to one hundred and fifty per minute, rendering it difficult to analyze he sounds; but the first sound and impulse were observed to coincide. The piral motion and elongation were as heretofore detailed. While still contracting forcibly, the heart was removed from the body, and the first sound heard when entire, and also when both ventricles were cut open and emptied of blood.

"*Experiment* 11.—As the last experiment had not been very satisfactory, we ursued the investigation upon a calf four weeks old; pulse one hundred and ive. Both sounds distinctly heard through the chest. Struck upon anterior portion of the cranium, and opened as before. The pericardium was left entire, o avoid the irritation of immediate contact with the heart. The stethoscope was placed alternately upon the aorta, the body of the right ventricle, and upon he septum near the apex. Upon the aorta the second sound was found to prelominate; upon the body of the right ventricle it was scarcely heard, and the first was present; and near the apex upon left ventricle, or septum, both were deected; the first, louder. The spiral motion, the elongation and elevation of the pex as before observed. A hook was passed into the aorta by Dr. Moore, and one of the semi-lunar valves elevated; the eyes of the auscultator were closed, o prevent the possibility of bias from preconceived opinions. While in this position, the auscultator announced the absence of the second sound, and the accession of a rough bellows sound in the first sound. The hook was then withdrawn, and the second sound was declared to have returned. This experiment was tried twice by each, and by some three times in succession, and the results were uniform. No hook was passed into the pulmonary artery, inasmuch as no sound was heard over it at this time. The auricle contracted while in the hand, emptied of blood.

"*Experiment* 12.—A ram six months old; pulse ninety-six; respiration fifty-six. Animal struck upon the forehead, as in the previous experiments, and artificial respiration established in three-fourths of a minute. During the opening of the chest, much hemorrhage took place. The heart was at first tumultuous in its action, but became regular in a few minutes. The first and second sound were heard over the body of the right ventricle, but more feebly than over the left; both sounds were heard over the left ventricle and aorta, but the second louder than the first over the latter than over the former. Hooks were passed into the ventricle, for the purpose of keeping open the auriculo-ventricular valves. (These, however, failed of effecting the object, as seen upon examination afterwards.) The sounds gradually became more feeble as the heart congested, and the second sound ceased altogether, both over the heart and arteries, while the first still remained. The auricle was observed to contract over its entire surface, as much upon the body as upon the appendix. The contractions with reference to the ventricle were irregular at this time, except for a very short period, when they appeared to precede those of the ventricle immediately, recurring at the termination of repose. The heart contracted one hour after the blow was given.

"*Experiment* 13.—Wether, nine months old. This experiment failed on account of defect in the apparatus for maintaining respiration. As the heart became more feeble, the auricle appeared to contract immediately antecedent to

the systole of the ventricle, but owing to the circumstances attendant upon this experiment, we feel very uncertain as regards the observation.

"*Experiment* 14.—Ewe, nine months old. Struck as before. Trachea opened in half a minute. Chest opened in four minutes. Heart tumultuous. It gradually became more quiet, until it fell to one hundred and twenty, and contracted forcibly. The first sound alone was heard over the right ventricle and pulmonary artery. Pressure upon this artery produced a bellows sound in the first sound. The auricles were pushed into the auriculo-ventricular openings by the fingers. The first sound was thus rendered much more feeble, and lost its sharp character, the ventricles contracting imperfectly and irregularly.

"*Experiment* 15.—A calf five days old; pulse one hundred and twenty-six; respiration thirty. Destroyed by a blow upon the head, as before. Artificial respiration established in two minutes and a half. The heart was exposed in six minutes, rather hurried in its action, but soon fell to one hundred and twenty pulsations per minute. The heart contracted with a moderate force. The second sound extremely feeble over the body of the right ventricle and pulmonary artery; but it soon disappeared over both. The sound was still heard over the left ventricle and aorta, louder over the latter. The auricle contracted with a quick motion, the contraction not being confined to the appendix, but extending over the whole body of the organ. As the heart became weaker, the pulsations were slower, and we were enabled to analyze the relative contractions of the auricle and ventricle much better than at any previous experiment. They evidently bore a different relation from what we had previously supposed. The succession is as follows:—First the auricle contracts, and the action is immediately propagated to the ventricle, which contracts instantly, accompanied with the diastole of the auricle; the diastole of the ventricle immediately follows, accompanied with a subsidence of the auricle by passive and not active contraction, which partially fills the ventricle; then follows the state of repose, at the termination of which the auricle contracts. During the dilatation of the auricle, the vena cava also dilates; but it was difficult to say, whether the cava dilated during the contraction of the auricle or not, as the contraction of the latter was so rapid and so soon followed by the contraction of the ventricle. While still contracting, and when scarcely any sound was heard upon the ventricles, the stethoscope was applied to each auricle, and a sound similar to the first was heard, but very short and more flapping, resembling very nearly the first sound of the fœtal heart.

"*Experiment* 16.—A calf two months old; pulse ninety. Deprived of sensation as before. The chest was opened in eight minutes, and a few ribs removed from the left side. The heart pulsated slowly, and at a rate of ninety-five per minute; both sounds were distinct, but not loud. The second sound was heard more loudly over the pulmonary artery than on the right ventricle, the sound being but feeble in either position. Both sounds were heard upon the left ventricle. An instrument was introduced into the left ventricle, through the auricle, and the mitral valves prevented from collapsing; this produced congestion of the ventricle immediately, and the action became hurried and irregular. The stethoscope being applied to the left ventricle, the sound was not as loud and clear as before, but not modified in any other manner. The instrument was then withdrawn, and the sound became louder. The relative contractions of the auricles and ventricles were as in the last experiment.

"The difference in the intensity of the first sound in this experiment, when the mitral valve was kept open and when allowed to close, may be attributed to the fact that there was no fixed point for the muscle of the ventricle to act upon, by the retention of the blood, and it therefore could not empty itself of its contents, and, of course, would not yield a strong sound."

From the preceding experiments, Drs. Pennock and Moore draw the following conclusions:

"1. The impulse is synchronous with, and caused by, the ventricular contraction; and when felt externally, arises from the striking of the apex of the heart against the thorax.

"2. The expulsion of the blood from the ventricles is effected by an approximation of the sides of the heart only, and not by a contraction of the apex towards the base; during the systole the heart performs a spiral movement, and becomes elongated. (Experiments 6, 10 and 11.)

"3. The ventricle contracts and the auricle dilates at the same time, occupying about one-half of the whole time required for contraction, diastole and repose. Immediately at the termination of the systole of the ventricle, its diastole succeeds, occupying about one-fourth of the whole time, synchronous with which the auricle diminishes, by emptying a portion of its blood in the ventricle, unaccompanied with muscular contraction. The remaining fourth is devoted to the repose of the ventricles, near the termination of which the auricle contracts actively, with a short, quick motion, thus distending the ventricles with an additional quantity of blood; this motion is propagated immediately to the ventricles, and their systole takes place, rendering their contractions almost continuous. (Experiments 15 and 16.)

"4. From the termination of their diastole to the commencement of their systole, the ventricles are in a state of perfect repose, their cavities remaining full, but not distended, while those of the auricles are partially so, during the whole time.

"5. The sounds are produced by the motions of the heart or its contents, and not by striking against the thorax, as proved in all the experiments; being much louder when the stethoscope was applied directly to the heart, than when to the chest, or with the lungs interposed.

"6. The sounds are more distinct when the muscle is thin, and contracts quickly. Hence, the clear, flapping character of the first sound over the right ventricle, as compared with the left.

"7. The first sound, the impulse, and the ventricular systole, are synchronous. This sound may be a combination of that caused by the contraction of the auricles, the flapping of the auriculo-ventricular valves, the rush of blood from the ventricles, and the sound of muscular contraction. From experiments 3, 4, 6 and 10, when the heart was removed from the body, the ventricles cut open and emptied of their contents, the auriculo-ventricular valves elevated, and a sound, resembling the first, still heard, it may be chiefly attributed to the muscular contraction. That these valves aid but slightly in its production, may also be inferred from experiment 16.

"8. The second sound is caused exclusively by the closure of the semi-lunar valves, from the re-action of the arterial columns of blood upon them, in its tendency to regurgitate through the aortic and pulmonary orifices. This is proved by the greater intensity of this sound over the aorta than elsewhere, the blood having a strong tendency to return through the valvular opening; by the greater feebleness of the sound over the pulmonary artery, which is short, and soon distributes its blood through the lungs, thus producing but slight impulse upon the valves in the attempt to regurgitate; by the disappearance of the sound, when the heart becomes congested and contracts feebly; and, finally, on account of its entire extinction when the valve of the aorta was elevated.

"9. The second sound is synchronous with the diastole of the ventricle."

These experiments, it will be perceived, confirm very nearly the conclusions of the British physiologists; and, in addition, lead to some new results.

ART. XXIII. *Statistics of the Medical Colleges of the United States.* By T. ROMEYN BECK, M. D. From the Transactions of the Medical Society of the State of New York, vol. iv. Albany, 1839, 8vo, pp. 64.

THESE statistics, though not complete, furnish some interesting information relative to the number, and places of residence, of the medical students and graduates, at various periods, in the different schools of the United States.

It appears that there have been *thirty-two* medical schools in the United States; three of which are stated, by Dr. B., to have been discontinued, and three more may be added to this number, so that there are existing at present *twenty-six.*

The number of students attending lectures in 1838-39, was *two thousand three hundred and eighty-seven.* Now, assuming the population of the United States in 1838-39 at fifteen millions, which cannot be far from the truth, it will give a greater proportion of students to the population than exists in any other country, so far as we have been able to ascertain. In Prussia, in 1835, with a population of thirteen millions, there were only 699 native students. In France, in 1835, with a population of thirty-three millions, there were but 2,672 medical students, which number includes many foreigners.

ART. XXIV. *Introductory Lectures, delivered at the University of Pennsylvania,* November, 1839. By WILLIAM GIBSON, M. D., Professor of Surgery. Philadelphia, 1839, 8vo, pp. 16.

THESE lectures present us with very interesting, graphic and spirited sketches of the prominent surgeons of the English and French capitals—the result of the lecturer's observations during a short visit the past summer. The professor seems to have been received with great kindness and distinction by his trans-Atlantic brethren, and if the colouring of his portraits owe some of their hues to the grateful feelings awakened by the courtesies he received, we can readily forgive every embellishment, for the amiable feelings it displays.

These sketches are, however, in the main faithful, and they are in fine contrast with the vulgar and scurrilous delineations which have recently appeared from another source.

SUMMARY

OF THE

IMPROVEMENTS AND DISCOVERIES IN THE MEDICAL SCIENCES.

ANATOMY AND PHYSIOLOGY.

1. *Anatomico-Physiological Remarks on a Person who had been Beheaded.*—Some very curious and interesting remarks on a person who had been beheaded are recorded in *Müller's Archives* for 1838, by Professor Bischoff, of Heidelberg. We extract the following particulars from a translation by Dr. Bigger, published in our esteemed cotemporary, the *Dublin Journal of Medical Science*, (Sept., 1839.)

The individual upon whom the following observations were made was a robber and murderer, named Sebastian Zink, who was publicly beheaded on the 6th of July, 1838. Professor Bischoff and Dr. Heerman stationed themselves immediately under the scaffold, so that they could have the head and body of the decapitated man immediately under inspection, whilst Dr. Jolly remarked on the outside every thing which should occur, the greater part of which could also be seen and heard by his two colleagues.

"A few seconds," says Prof. B., "after the blow with the sword had been struck, at thirty-six minutes and a half past nine, we received the head, which was hastily handed down in the bandage which had covered the face, without having been deranged by falling or receiving any shock. The bandage was immediately removed, in order to see the manner of separation from the body, the bleeding, and the impression of the features. The blow had been given most successfully, and the blade had passed anteriorly between the os hyoides and the larynx, posteriorly very nearly between the fourth and fifth vertebræ, yet in such a manner that a portion of the left oblique process, and of the body of the fourth and a piece of the oblique process of the fifth were hewn through. The blood flowed slowly and continually. The expression of the countenance was of the most perfect tranquility, not a trace of pain or distortion. The eyelids were a little sunk, the mouth closed, yet easily opened. The expression of the eyes was perfectly tranquil, neither staring, as mentioned by an earlier observer, nor yet dull and without lustre, but like those of a person who looks at something at a great distance. Dr. Heerman, who had visited and sat with the criminal for an hour on the preceding evening, could not discover any greater change in the features than the absence of his accustomed piercing, sharp glance, and the pupils being somewhat dilated.

"I approached my fingers, and then a brilliant needle close to the eyes, yet without touching either eyes or eyelids. This was repeated often without causing the slightest motion in either the eyes, eyelids, or other features.

Dr. Heerman now shouted his name in his left ear, and the word 'pardon.' under the conviction that this sound would produce an effect upon whatever consciousness might be present, as up to the last moment the criminal had been continually hoping for a reprieve. There was no trace of any motion. I now held to his nose a bottle of very strong smelling tincture of assafœtida, which

preparation I preferred to ammonia, because I expected a purer action from it on the olfactory nerves, as it might be possible that the ammonia, by stimulating the nerves of the mucous membrane, should produce a motion of reflection. This experiment also failed. I then dropped upon his tongue a drop of the tincture of coloquintida; a feeble thrusting forward of the tongue and slight motion of the jaw ensued; both these motions were repeated three or four times, at short intervals, whilst in the other features no trace of motion was visible. In order to try, in a certain degree, how far the spirits of wine contained in the tincture could be regarded as cause of the motions, I placed a drop of pure spirits of wine on the tongue, which caused a similar motion of both tongue and jaw.

"All these experiments were finished within one minute after the fatal blow had been given. The question now arises, were those feeble motions of the tongue and jaw the consequences of sensation? if so, consciousness must have been present; or were they reflected motions dependent on irritation of the mucous membrane of the tongue, or from irritation of the severed spinal marrow, and therefore not caused by the tincture of coloquintida? To both of us the last of these suppositions appeared most probable. The tranquil condition of all the other muscles of the face appeared to contradict the idea that any unpleasant taste or flavour had caused these motions. The symptoms of the reflex function, however much developed in the motions of chewing and swallowing, are much less affected by irritants applied to the tongue than by those applied to the mucous membrane of the palate, uvula and jaws. I must mention, also, that real irritation of the mucous membrane of the tongue with the point of a pin produced no motion. On the other hand, opening and shutting of the mouth are the motions which are most frequently to be seen in decapitated animals, and which are certainly dependent on the violent irritation of the spinal marrow. The tongue can move very little at the same time, on account of the attachments of the muscles which retract it having lost their fulcrum.

"Thus there does not appear to have been a single symptom present which permits us to suppose that consciousness was present; it appeared to have ceased instantaneously. It is right to remark that previous to the blow being given, he was not at all confused in mind, as were the ten criminals beheaded by the executioner Brand, as communicated by Heim. Zink, previous to execution, was in a perfectly careless mood, yet a little excited, and displayed the lamentable rudeness of his general demeanour; his mental powers were so little affected, that he said to the attendants of the executioner, as they were binding on the bandage on his eyes, an instant before he received the blow, 'Ye slaughter one like butchers!' During life this man seemed to possess very little nervous sensibility, the same was evidenced after death, in the experiments performed, so the evidence of those who have obtained contrary results is not by this instance much weakened. Yet I may say that negative results of an observation in the state of mind in which the greater number of observers must be at such a moment, carry with them more credence than positive ones, in which the excited fancy may play a prominent part, as from the relations of others, who during similar operations previously have beheld marvellous things. All the evidence brought forward with any accuracy to prove the continuance of consciousness have consisted mainly in a few remarks on impressions being conveyed to the auditory apparatus in animals which had been irritated, which collectively cannot be considered as motions of reflexion, or as caused by irritation of the spinal marrow.

"I now proceeded to perform certain experiments from which I expected real motions of reflexion. I touched with a needle the eyelids and eyelashes as well as the conjunctiva; I irritated the mucous membranes of the nose, mouth and pharynx, in the expectation of perceiving motion, but all in vain; all the muscles remained perfectly quiet, so that this was a proof not only of the rapid disappearance of consciousness, but also of that of the nervous irritability. Even piercing the severed part of the spinal cord with needles, and touching it with a pencil of kali causticum, produced no motions more in the head, whilst

yet not more than from two to three minutes had passed from the period when it was severed from the body.

"We now turned our attention to the trunk, and whilst Dr. Heerman quickly tied the carotids, out of which the blood continued to flow with little jerks, in order to support the nervous and muscular irritability by detaining the blood, I sought, by piercing, scratching and pinching the skin on the soles of his feet, fingers and toes, to call forth some reflex motions; this proved vain also. Irritating the spinal cord produced twitchings in the pectoral muscles, and elevation of the arms.

"The corpse was now placed in a coffin and conveyed to the neighbouring hospital, where every thing was ready for further experiments. It was now fifteen minutes past ten, consequently thirty-eight minutes and a half since the execution.

"We next introduced some electrical streams into the nerves. For this purpose Dr. Jolly had constructed a galvanometer, which by the immersion of a single plate of one-fourth inch square in pure water, produced an aberration of the magnetic needle to about 90°. I first sunk the platina terminations of the two conductors, one in the gray, the other in the white substance of the spinal marrow of the trunk. This process being repeated often, and the needles changed, not the slightest motion of the magnetic needle occurred; the introduction of the needles also caused no twitchings of the muscles. This experiment was tried on account of the assertion of Folchi, who stated that in a calf which had just been decapitated, and on which a similar experiment had been tried, there was an aberration of the needle about 6° west, on every new introduction of the needles, (Froriep's Notizen, No. 950,) which experiment had often before been tried without any effect on decapitated dogs. Dr. Heerman now exposed the median nerve in the upper arm, and I plunged the two needles into the trunk of the nerve, at the distance of about one inch from one another, and endeavoured, by mechanical irritation of the spinal marrow to produce twitchings in the arm; none occurred, nor were there any changes in the magnetic needle. I now applied one pole of a powerful galvanic battery of sixty pair of four inch plates, capable of giving me a tolerably strong shock, producing sparks, and decomposing water, upon the spinal marrow, the other on the hand. There arose evident yet slight twitchings in some of the muscles of the fore and upper arm, viz: in the supinator longus, extensor carpi, ulnaris longus, and in the internal head of the triceps, but no motion in the magnetic needle. It also remained perfectly unmoved when I applied the second pole upon the trunk of the nerve, the same was the case when I applied both poles to the trunk of the nerve, so that the chain was perfect, although in the latter instance twitchings occurred in the muscles mentioned above. Some inference may be drawn for the hypothetical electrical streams in the nerves, at least that the nerves are exceedingly good conductors of electricity, and much better than the metals, or otherwise the magnetic needle should have been affected in the last case, had it been the better conductor. Mattevic, in the Bibl. Univers. de Genéve, August, 1834, has communicated a similar experiment with like result. On the contrary, J. Müller has, in the Archiv. für Anatomie, Physiologie, &c., declared that all parts of the body, and even a drop of water act in the same manner. Without wishing to raise any doubt against this observation, we may say that from it cannot be deduced that the nerves and perhaps other moist organised parts are not good conductors. The want of reaction in the galvanometer, when the circle is completed, by any of these parts, will admit of the general conclusions being drawn either that they are very good or very bad conductors of electricity. The experiment of Müller admits only the one explanation, that the moist organic structures are very bad conductors, for he only employed a weak source of electricity, a single pair of moistened plates, and the circle was not completed, and thence there was no aberration of the magnetic needle. On the contrary, in our case the occurrence of reaction, the contraction of the muscles showed that the circle was completed. Should any one object that nerves are bad conductors, and that the results we obtained were from our using a very powerful source of elec-

tricity, his own argument might be used against him, for the more powerful the electricity, the more likely would it be to pursue the metallic conductor if it were the best. The non-reaction of the galvanometer appears to have been caused by the very great conducting susceptibilities of the nerves (or perhaps of the other animal tissues,) for electricity. I do not wish to draw as a conclusion that electricity is the active agent of the nervous system, a circumstance which for many other reasons I think to be improbable. I have repeated also the experiments of Varvasseaux and Berardi, as well as those of David, and in no instance has there been any change of position remarked in the magnetic needle when I sink the platina conductor of the galvanometer into the nerves of a living animal, and by means of mechanical irritation caused motions and twitches, actions of nervous irritability. This is accounted for, as we said before, from the nerves being better conductors than the metals.

"Mechanical irritation of the median nerve, pricking, pinching, and even cutting it across, produced no effects, whilst galvanism still produced twitchings.

"I next opened the chest and abdomen, whilst Dr. Heerman tried some experiments on the irritability of the iris. It was now fifty minutes past ten, and the iris showed no disposition to contract, not even when the pole of the battery was applied directly to it, the cornea having been removed, yet the battery was so strong that it immediately caused decomposition of the fluids of the eye, and a development of gas.

"In the chest and abdomen there were no spontaneous movements to be seen; also when the galvanic pole was applied consecutively to the phrenic and vagus nerves, to the stomach and intestinal canal, on the ureters, gall bladder, and the cystic duct, no contractions occurred. The right auricle of the heart alone continued to move after this, for an hour and a quarter, the same occurred in the muscles of voluntary motion, but was scarcely perceptible after an hour and fifty minutes. As the experiments on the phrenic and vagus nerves were made at ten minutes past eleven, just one hour and thirty-three minutes and a half from the execution, even then the twitchings in the voluntary muscles were very weak, in comparison with those mentioned by other observers in other cases, which confirms the remark which I made already with regard to the head, that the nervous faculty and capability of irritation were not strongly developed in this man.

"Whilst these observations were making, I was seeking the thoracic duct, which I found, with a good deal of trouble, on account of the body being very fat and the vessel containing only a muddy, grayish fluid: a portion of this fluid being removed, coagulated as usual, but it formed a very small coagulum around the bit of stick which was moved in it. Under the microscope the little round bodies did not appear numerous in the fluid, but were nearly of the same size as the molecules in the blood, many of which might have entered along with the chyle whilst we were obtaining it, but there is sufficient to distinguish these two sets of bodies from one another.

"I take advantage of this opportunity to communicate my observations on the chyle molecules, which I had often examined in dogs. In the white chyle of the thoracic duct of young dogs, after being fed, I have always seen two kinds; the first exhibits an innumerable quantity of exceedingly small, little bodies (kòrnchen) or particles, which are only to be seen when the chyle is permitted to run on plates of glass, when their appearance is exactly like that of sand put in motion. The microscope must be very powerful to show this. The second kind of little bodies are fewer in number, much larger, and the greater part of them of the size of the molecules in the blood, but there is no kernel and no envelope to be seen in or on them, besides they have not the yellowish appearance which, when powerfully magnified, even a single blood molecule exhibits; they are unchangeable in water and in active acid. When the chyle is agitated they sink to the bottom, and they form a part of the coagulum. The rest of the fluid remains white, where they are in very small number, and where they could not be the cause of the intense white colour. This colour is, I think, attributable to the other set of innumerable little molecules, which I

take to be fat. Still I am opposed to the opinion of J. Müller, that the white colour of the chyle is principally attributable to fat; for if the chyle be treated with æther, in a glass tube, often shaken, and fresh æther still added, (not in a watch glass, where the experiment cannot succeed,) it loses nearly all its colour, and appears of a light opal. This remnant of opacity cannot be caused by the larger molecules, for they were dissolved just as the blood molecules are by the æther, a process which I saw going on; but it seemed to me that this opacity arose from coagulated albumen, which is more difficult of solution in æther. Very numerous little bodies were to be seen in the fluid, which remained like coagulated albumen. I believe that the evidence of Tiedeman, Gmelin and J. Müller are alike, all considering the prevalence of the white colour in the chyle as proceeding from very minutely divided particles of fat, but that these are not the genuine chyle molecules which exist independent of them. This view is strengthened by this, that in the pinkish contents of the duct in dogs which had fasted long, those very fine particles were not so evident, whilst the other chyle molecules were even as numerous, nay, relatively more numerous than usual.

"After having collected the chyle, I observed the mucous membranes of the trachea and larynx, and had the pleasure of seeing myself, and being able to show to those present, the ciliary motions. These motions were not discoverable in the æsophagus, not even in that part which covers the posterior wall of the cricoid cartilage.

"I next examined the urethra, vesiculæ seminales, vas deferens, epididymus. In the urethra it was evident that an ejaculation of semen had taken place, as in the case given in Valentine's Repertorium, I. p. 277; this arises, naturally, from the violent contraction of all the muscles at the moment of decapitation. There was found in the urethra many large, yellowish coagula, like coagulated lymph, and a whitish fluid which contained mucous seminal animalculæ alive, but not so numerous as those which I have seen in the seminal fluid of other animals. The same kind of coagula, and the same animalculæ were seen in the vesiculæ seminales, which were of small size. The animalculæ were found in the whole course of the vas deferens, alive, but not in such great numbers. I thought I could see them also in the seminal canals of the testis, but as they were few in number, and not living, I do not wish to assert this as a positive fact. The contents of these parts contained also many other kinds of particles, but none of such determined forms as those which Valentine describes. It is probable they were particles of epithelium. The fluid which exuded, on a section of the prostate being made, was clear and pellucid, but I could not discover in it any elementary bodies, except some blood molecules.

"Much pains were taken to examine the brain carefully; when the skull-cap was removed, all the veins were found to be full of air, and air had penetrated between the pia mater and arachnoid, causing a very peculiar appearance on the surface of the hemispheres. Could this air have entered at the severed part of the spinal cord? This is difficult to credit, for in the brain as well as in the spinal cord, the pia mater and the arachnoid lay very close together, and no fluid intervened, the escape of which might permit the entrance of air. Through rupture of the vessels? This I am not willing to allow either. And by this my view is strengthened, that the formation and course of the arachnoid is not yet perfectly discovered. The examination of the brain was not satisfactory. Particular attention was paid to the spleen: in it I found the little white bodies described by Malpighi, which I have seen in the four classes of vertebrated animals, but which are hard to discover clearly in man. I believe that the function of the spleen is to produce them, and I cannot see any reason why Müller should suppose that those he has seen in certain ruminating animals, are of a nature different from those which have been found in the spleens of other animals, or from those which I believe to exist in the healthy spleens of all men. That these are hard, and tolerably large in some, whilst in others they are soft, small, and easily dissipated, is no reason that they should be considered essentially different. I found, also, in these bodies, universally, as well as in the spleen of this subject, those little round bodies or balls which J. Müller has described.

With a cataract needle it is easy to isolate as many of these little bodies from the spleen as may be necessary for microscopical observation. I find that these are exactly similar in appearance, size, relations to water and acetic acid, to those of the chyle; therefore is it not possible that these may originate in the spleen? It is true that the corpuscules of which the parenchyma of the liver consists, are, as Müller remarked, very like those in the corpusculi Malpighiani, yet similar bodies are to be found in many places, and still the parts organised from them are very different from one another.

"From attention to this point, I think shortly, much information will be obtained with regard to the spleen, and the formation of the corpuscules of the blood, although as yet no change has been seen in the formation of blood after extirpation of the spleen. It is questionable whether sufficiently accurate examination has been made of the blood globules in those animals which have been deprived of their spleens.

"Lastly, I examined the stomach and the villi of the intestinal canal. In the former the mucous membrane of the fundus was strikingly softened; it was now 4 o'clock, and the day very warm, the contents of the stomach smelt very sour, from wine and salad. The villi of the small intestine were of pyramidal form, formed of little bodies united together, and I could not discover any epithelium formation on them after they had been gently washed in water.

"There was no diseased appearance in the whole body, except an adhesion of the lung to the walls of the thorax, occasioned by an old gun-shot wound in all probability; three grains of large shot were found under the pleura costalis, unchanged in appearance, and surrounded by a quantity of cellular tissue.

"The ventricle of the heart was very strong and muscular, and compared with the rest of the muscular structures, might be called hypertrophied.

"After six hours busily and uninterruptedly employed with the body of this unfortunate man, though aided by my friends, I still feel that many observations might have been made in a more accurate manner. My hope is, that what has been done may lead to further observation on the same subject."

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2. *Ectopia Cordis.*—Two cases of this rare mal-formation have been already recorded in this Journal, (see No. for February, 1833, p. 346, and No. for November, 1838, p. 192,) and we have now two more to add to them, extracted from recent foreign journals.

Case 1.—On the 11th of February, 1838, Dr. Pecchioli, Professor of Clinical Surgery in the University of Sienna, was sent for to the *Hôpital Santa Maria della Scala*, of Sienna, where a child had been brought, born at the full period, the heart of which was exterior to the chest. This organ had protruded through a nearly circular opening of about an inch and a half in diameter, the margin of which was regular. The pericardium was entirely wanting, the heart appeared naked. The coronary vessels well developed and full of blood were easily distinguishable. The large vessels, both arterial and venous, seemed as if prepared by the scalpel of the anatomist; they passed into the cavity of the chest, leaving the heart hanging like a medal. This organ could be seen in the performance of its functions; the right cavities were anterior and the left posterior. The apex of the heart was turned downwards, and in the contractions of the left ventricle, it could be seen to bound forwards, and move more than an inch from the points at which it was during its period of relaxation.

At the moment of birth, the action of the heart was energetic, but it gradually lessened until death, which took place in 26 hours.

The autopsy showed that the upper piece of the sternum was deficient, except a small lateral portion to which the clavicles were articulated. The xyphoid cartilage was present.

The specimen has been preserved in the museum of the hospital.—*Gaz Méd. de Paris*, 5 Jan., 1839.

Case 2.—On the 20th March, 1839, at Schneidemühl, a stout woman, who had before borne five living and healthy children, was delivered of a remarkably stout female infant, presenting the following defective formation:—The heart,

and under it, the stomach, both organs apparently separated by a partition, lie outside the thoracic and abdominal cavities, in a sack of skin nearly transparent. The protrusion is through a deficiency of the lower third of the sternum and upper part of the wall of the abdomen, as far as midway between the pit of the stomach and navel. The fissure is altogether $5\frac{1}{2}$ inches long, and $2\frac{1}{4}$ inches broad, and is situate almost in the middle line of the body. The child is living, sucks, and is otherwise well. The prolapsed parts are protected by an appropriate bandage.—*B. and F. Med. Rev.*, Oct., 1839, from *Med. Zeitung*, April, 17, 1839.

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3. *Double Peritoneal Sac.*—M. Nonat communicated to the *Société Médicale d'émulation*, a curious anomaly in the peritoneal sac observed in a man æt. 60, who died in the Hôtel Dieu, of gangrena senilis. On opening the abdomen there was found in addition to the ordinary peritoneal sac, a second one, concentric with the first, and enveloping the small intestines as far as the ileon. This second peritoneum was identical in its structure with the first, and appeared rather congenital than accidental.—*Gaz. Méd. de Paris*, Sept. 7, 1839.

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4. *Experiments on Digestion.*—The following are the results of some extremely interesting experiments of Professor Schultz, of Berlin, instituted for the purpose of determining the relative digestibility of food in the stomach, and to ascertain the nature of the movements of that organ. The experiments themselves, from which these results are derived, we shall give in our next number.

"The first result," says the Professor, "which is obtained from my experiments upon digestion is, that vegetable food is more difficult of digestion than animal, and raw animal more difficult than boiled. Connected with the more difficult digestibility of vegetable food, is its longer continuance in the stomach and cæcum than usual. The stomachs of ruminating animals are often not empty after five days fasting; in the rabbit much food is still to be found in the stomach after a fast of 24 or 36 hours; and in carnivorous animals, pieces of potatoe and carrot that were devoured at the same time with meat, may be found still unaltered, although the meat be long ago digested. Even bread is less digestible than meat, though of all vegetable food the easiest.

"It may be asked, how the longer continuance of vegetable food in the stomach is possible, as the peristaltic motion is as strong in herbivorous and omnivorous, as in carnivorous animals. An explanation of this is afforded by the different forms of the stomach. In all herbivorous animals the small curvature of the stomach is very small, and the œsophagus is inserted near to the pylorus, while the fundus, on the other side of the œsophagus, is very much extended. The large curvature, which includes the whole of the fundus, is, on the contrary, much more developed; and the pylorus itself is short in proportion to the fundus.

"In carnivorous animals, on the other hand, the small curvature of the stomach is more developed in proportion to the large; the œsophagus is inserted nearly at the fundus, and the pylorus is, in proportion to the fundus, longer than in the herbivorous class.

"If, now, the nature of the peristaltic motion of the stomach be more nearly considered, it will be seen to be very different in carnivorous and herbivorous animals. The motion of the stomach may be compared to the peristaltic motion of the intestines, since it consists, like that, of alternate contractions and expansions of the circular and longitudinal muscular fibres. The only difference is, that in the intestines this motion is on all sides uniform, whilst in the stomach the motion of the small curvature is less the shorter it is, and, on the contrary, the more extensive the large curvature is, the greater will be its peristaltic motion, so that in herbivorous animals, the motion of the small curvature may disappear almost entirely. The difference between the peristaltic motion of the stomach and that of the intestines, therefore, will be the greater the more the small curvature is shortened in proportion to the large, and the more it is ex-

panded; and, therefore, at the same time, the pylorus lengthened, the more they will resemble each other; for the pylorus itself has nearly one uniform expansion of its muscular fibres, and, in consequence, its motion, like that of the intestines, is on all sides uniform.

"The motion of the stomach may, accordingly, be considered as defective since it takes place only upon the large curvature, while the small is nearly motionless. It is evident that this partial motion will be greatest in herbivorous animals, and that in the larger proportional development of the small curvature and lenthening of the pylorus of carnivorous animals, the motion of the stomach will be more similar to that of the intestines.

"The different kinds of motion in the stomach have a very different influence upon the motion of its contents. In herbivorous animals, when the large curvature is chiefly put in motion, the food is moved only along the course of the larger, and at the smaller is nearly motionless. If, now, the food, as is generally the case in those animals—for instance, in the rabbit—as long as it remains at the fundus, forms one consistent mass, it cannot otherwise happen, than that by the continued partial forward movement of this mass by the large curvature, it will revolve upon its axis in the direction of the peristaltic motion, and be pressed into a ball which takes the form of the floor of the stomach. All the contents, therefore, will not be moved forward towards the pylorus, but only that part which is changed into chyle at the surface of the ball, while the remaining part will continue to turn round in the fundus of the stomach. In this way the food in the stomach of herbivorous animals cannot go over into the intestines before it is quite dissolved, and this motion of the stomach is perfectly correspondent with the long continuance of the food in that organ. It is, however, very different in carnivorous animals. There the motion of the stomach is, corresponding with the quicker digestion, so arranged, that the rotatory motion of the food takes place either not at all, or at most but imperfectly; for the food at the small curvature is moved, although slowly, forwards towards the pylorus. and, therefore, put into a more progressive motion.

"The reason, therefore, why the food continues longer in the stomach of herbivorous animals is, that through the peculiar structure and motion of the stomach it is set into a rotatory motion, whereas the progressive motion into which the stomach of carnivorous animals sets its contents, is correspondent with its quicker digestion.

"That the omnivorous class stands in the middle between these two is self-evident.

"It appears of importance to remark, that in man, in the different states of health, the one or the other kind of motion may preponderate, and that the stomach may accordingly develop itself proportionately to the larger quantity of vegetable or animal food. The fundus will extend itself when the vegetable diet preponderates, as may be seen in old dogs which have always been fed upon vegetables. In this case the digestion will proceed more slowly, and through the rotatory motion the food will be kept longer in the stomach; in the opposite case, on the contrary, the food will be soon removed from the stomach by its preponderating progressive motion. If, now, in the usual formation of the stomach of man, indigestible vegetable food be taken, it will, like digested animal substance, be quickly removed from the stomach into the intestines, and thereby produce a disturbance of the cæcal digestion.

"I now proceed to speak of the act of vomiting, in the different forms of the stomach. The anti-peristaltic motion of the stomach bears the same relation, in the different forms of the stomach of carnivorous and herbivorous animals, to the evacuation of the food by vomiting, as the peristaltic motion bears to its further progress through the pylorus into the intestine. All those herbivorous animals in which a rotatory motion of the contents of the stomach takes place, either do not vomit at all, or with great difficulty; for the food is not urged by the anti-peristaltic motion towards the œsophagus, but merely set into a rotatory motion in the opposite direction, so that notwithstanding it be pressed upon all

sides, it cannot be driven out. The animal vomits, therefore, with the greater difficulty, in proportion as the stomach is so formed, that its contents are set into a perfect rotatory motion, as in the rabbit, horse, &c. &c. It has been hitherto said, that horses are prevented from vomiting by the spiral valve at the œsophagus; but this valve can no more prevent the regress of the food than its ingress into the stomach, since its action in the anti-peristaltic motion is merely the reverse of that in the peristaltic, viz., that like the cardia, which is without valves, it alternately opens and shuts, and so, at every time of opening, allows the egress as well as the ingress of the food. The reason, therefore, why these animals during nausea cannot vomit, must be sought alone in the peculiar form and motion of the stomach.

"On the other hand, vomiting takes place the more easily in proportion as the stomach is lengthened, and is in construction more similar to the intestines, for the food may then be driven towards the openings, either backwards or forwards, without being put into a rotatory motion. Hence, dogs and all carnivorous animals vomit without difficulty, and even in man this difference is remarkable, for children, on account of the similarity of their stomach to that of carnivorous animals, vomit easily, while, on the contrary, to older people, whose stomach resembles that of the herbivorous class, this process is more difficult.

"Hillifield (*Experimenta Quædam de Venenis*, Goettingen, p. 50) was already acquainted with the fact, that rabbits could not vomit. I have myself likewise endeavoured to excite vomiting in a rabbit by a dose of two grains of emetic tartar. A quarter of an hour after nausea was produced, together with great disquietude and anxiety; however the animal did not vomit. I have found also, by a similar experiment, that the guinea-pig, which has the same kind of stomach, is not capable of this process. These phenomena do not contradict the experiments of Magendie upon the action of the abdominal muscles during vomiting: for where vomiting is possible, the motion of the stomach gives merely the direction to its contents in which they are to be thrown out; vomiting itself is produced by the action of the diaphragm and abdominal muscles.

"The rumination of ruminating animals appears to take place so, that the food in the first stomach is not at all moved; or at least not in a rotatory manner, for it is generally too fluid, or too little consistent, to be able to form a round ball. However, in this form, small quantities of the chymy mass are more easily pressed into the œsophagus by the action of the diaphragm and abdominal muscles. This process has been ably explained by M. Flourens.

"I must now speak of diseased excitement of the motion of the stomach. There is another circumstance which causes a morbidly quick motion of the food from the stomach into the intestines, namely, too great fluidity. We have already seen, that the food corresponding to its time of continuance in the stomach, becomes more or less consistent. This happens, also, with liquid articles of food, for milk is changed in the stomach of calves into a cheesy lump of almost stony hardness, from which all the whey has disappeared. In milk this is caused, evidently, by its speedy coagulation, and the absorption of the whey by the vessels of the stomach; and in other liquids which are not coagulable, by the simple absorption of their fluidity. It must not be supposed that watery food is in itself hurtful to the digestion, for its fluidity is absorbed and the solid matter remains behind. However, there are fluids which, from their stimulating or indigestible qualities, either always, or only under certain circumstances, quicken the motion of the stomach so much, that the fluidity cannot be absorbed before it, as well as the solid parts, are removed from the stomach without being digested. This, it appears to me, is the cause of the prejudicial effects of milk, raw eggs, coffee, &c., which I have observed partly upon myself and partly upon animals.

"Milk, particularly in weak stomachs, quickens the motion of that organ so much, that even before it is coagulated it disappears through the pylorus. The digestion of the food with which the milk is taken will hereby be disturbed, and as it goes mostly undigested into the intestines, will also cause a dsiturbance of

he cæcal digestion, which will be followed by diarrhœa. The action of beer, particularly only half fermented beer, is similar.

"The same is the case with the raw yolk of eggs, the nourishing properties of which I do not dispute, but merely maintain, that in weak stomachs it is hardly digestible. Hard-boiled eggs are more easily digested than raw, as they do not excite the motion of the intestines.

"The effects of cold water are also similar. However, here it is not the water, but merely the cold which improperly affects the motion of the stomach, for in weak stomachs hot water always produces the most beneficial effects.

"Of all fluids, the prejudicial action of coffee is the greatest. The carbonisation of part of its oil, during roasting, appears to be the cause of this property. It is not merely itself indigestible, but also makes all other food, with which it is taken, likewise indigestible. From its stimulating properties the motion of the stomach is so greatly increased, that the whole contents disappear from the stomach before they are digested. This, in the healthy state, and when the stomach is overcharged, may relieve those complaints which are mechanically produced by the distension of the stomach, and it has therefore been generally thought that coffee promotes digestion. However, in fact, it disturbs it, and can only cause a momentary relief, which is presently followed by a greater evil, namely, a disturbed cæcal digestion. It is evident that coffee taken in the morning, and when the stomach is empty, cannot have this effect, for it can only go quickly through the intestines to the already digested excrement, without disturbing the digestion of other food.

"There still remains something which requires illustration, namely, how the stomach of amphibious animals and fishes, which is nearly uniformly extended on all sides, or at least whose small curvature is but little shortened, can detain its contents so long as is usual in these animals. The reason of this may be easily perceived if we consider that the peristaltic motion is here so slow and weak, that it is hardly to be recognised, and has been, indeed, altogether denied by several naturalists.

"The degree of digestibility of meat is different, according to the way in which it is prepared, and also according to the different animals, and the parts from which it is taken.

"Roasted meat is harder to digest than either boiled or raw. Its more difficult digestibility is probably caused by the partial carbonisation and hardening of its muscular fibres, which even after separation from one another go over into the intestines mostly unchanged, while the fibres of boiled meat are entirely dissolved. That according to the degrees of roasting, gradual approximations to boiled meat may take place is self-evident.

"Smoked or salted meat, such as ham, is easier to digest than roasted, and harder than boiled meat. To preserve the meat from spoiling it is saturated with the carbon of the smoke, and is rendered the more indigestible the more it is smoked, and in consequence dried. All substances which are used for the preservation of meat, render it, at the same time, indigestible, as it thereby becomes less soluble, for the most easily decomposable meats are, in general, the most easily digestible. Fat, particularly when surrounded by cellular tissue and thoroughly smoked, is still less digestible than roasted meat.

Cheese, new, as well as old, is nearly as digestible as boiled meat; nevertheless, its peculiar volatile part brings much foreign matter into the blood, which strongly stimulates the secreting organs, and gives rise to various complaints of the bladder. I have found that the flesh of the lower animals is in general harder to digest than that of the higher classes, and the easiest of all is the flesh of the mammalia and birds. Fish, boiled, as well as salted, such as salmon, herring, &c., is harder to digest than the roasted flesh of the mammalia, and roasted and salted fish more so than boiled. The fish of the crustacea, as is shown by my experiments upon crab's-flesh, is still more indigestible and injurious, and is not in the least altered, even when the roasted meat begins to be digested. This explains the fact, that fish and crustacea require very healthy digestive organs to be digested, and very easily excite intermittent fevers in people who are a

little disposed to disease. I am acquainted with an example of this in the village of Binnenwalde, near Rheinsberg, where, during autumn, a great many people were afflicted with an intermittent fever every Wednesday and Saturday. Upon further inquiry, it was found, that at this season of the year, the Tuesdays and Fridays were employed in fishing, and that most of the inhabitants ate fish in the evening or on the following day. With the changing of the day for fishing, the day upon which the fever broke out changed also; and when I explained to the people the effects of fish, and the sickly ate no more, the fever became more rare, and at last ceased entirely.

"The violent fits of illness which in many people follow the eating of crabs, &c., and even the poisonous effects of certain fishes, appear to arise from their general indigestibility.

"Oysters are the only exception to the indigestibility of the flesh of the lower animals. Nevertheless, that there is a certain similarity between them and fish, is shown by their frequent poisonous effects. It is also not known whether the oysters are really quickly digested, or whether, from an excitement of the motion of the stomach, they go speedily through the intestines, either partly or wholly unchanged. This is the more probable, as in many people they are apt to produce diarrhœa. The chyme also of oysters is much less acid than that of meat.

"The boiled flesh of fowls and pigeons I found was easier to digest than boiled beef or veal. In general, the flesh of young animals, especially veal, appears to excite the motion of the stomach, and by causing diarrhœa, to render its digestion less perfect than that of the flesh of full-grown animals. I have not observed any difference in the digestibility of the lean parts of mutton, pork, or beef, although pork and mutton are generally less digestible, on account of the larger quantity of fat which they contain.

"In all these different sorts of meat I have observed that their digestibility is much promoted by a perfect extinction of their living principle, by allowing them to hang in the air more or less time, according to the season of the year. I have often seen in cats and dogs, that the flesh of old animals, boiled perfectly fresh, is as indigestible as when eaten raw, and in man also with a weak digestion, the same difference in the digestibility of fresh and stale meat may be observed. The flesh of domestic animals, by becoming a little stale, is more easily digested, and is then also more digestible than that of wild animals. Among these latter, venison and wild boar are hardest to digest.

"In general, it may be inferred from my observations, that it is of great importance to establish a difference between the digestibility and nourishing properties of food, since very nutritious but indigestible substances, such as smoked and roasted meat; are often more injurious than such as are less nutritious but easily digested, as the finer vegetables, spinach, asparagus, &c.

"On the other hand, we must not determine upon the digestibility, or at least the nourishing properties of food, from the feeling of facility with which it is removed from the stomach. All those kinds of food which, by strongly exciting the motion of the stomach, go quickly into the intestines, may be easily borne by the stomach, but are very imperfectly dissolved, and at last are followed by all the consequences of disturbed digestion. They afford the body, therefore, only a very small quantity of digestible matter, and are again excreted mostly unchanged. On the contrary, there are other kinds of food which, on account of their long continuance in the stomach, appear for the moment to be hard to digest, yet are nevertheless perfectly digestible, and never followed by bad consequences upon passing into the rest of the intestines.

"There are, therefore, really indigestible substances which, under certain circumstances, and taken in moderate quantity, are easily borne by the stomach, for instance, oysters, milk, eggs, coffee, &c.; and there are also substances easily digestible, which sometimes appear to be less easily borne by the stomach, as is sometimes the case with boiled meat, particularly when taken in large quantities, which, on account of their perfect chymification, always remain longer in the stomach."—*Lancet, Nov.* 16, 1839.

5. *On the Preservation of Subjects for Anatomical Purposes.* By B. G. Babington, M. D. and G. O. Rees, M. D.—The difficulty which has existed in supplying the medical schools of London with subjects for dissection has made it an object of much importance to discover a method by which human bodies may be preserved from putrefaction. This matter was more particularly brought to our notice last winter, when great inconvenience was felt by the students, not only of Guy's Hospital, but of every school in London, from the insufficient supply of subjects for dissection.

There are, it is true, many methods now in use of preserving animal matters, and the processes of tanning, salting, pickling, drying, smoking, freezing, are so many familiar examples of those methods; but they are all more or less inapplicable to the purposes of anatomical science: thus, tanning, smoking, and salting, wholly alter the appearance and texture of parts; the corrosive action of acids is injurious to the instruments employed in dissection; and immersion in ice, which might possibly be practised, under favourable circumstances, in preserving whole subjects, would, independently of its expense and inconvenience, fail of its effect, when once the student had begun his work. The only antiseptic which is free from the foregoing objections is a solution of alcohol. This, it must be admitted, answers well for museum preparations; but its powers are limited, and its injection into the blood-vessels, even in its most concentrated form, will not materially retard decomposition: moreover, it destroys colour, and when employed in sufficient quantity to admit of the immersion of parts, is too costly for common use.

Some simple experiments of a purely practical nature, which we were induced to institute in consequence of the foregoing considerations, have led to a discovery, the application of which promises to remove one great obstacle to the study of the most important branch of medical education. Our attention was first directed to those chemical substances which were known to coagulate the blood; and we accordingly prepared strong solutions of the following metallic salts; viz. sulphate of zinc, sulphate of iron, and diacetate of lead. We purposely stopped short of the point of saturation, from a belief that the greater density of the fluid, in the case of salts so soluble, would impede its flow on injection. Infusion of galls was also adopted, from its powerful action in precipitating animal matters; and sugar in the form of syrup, being well known to possess preservative qualities, we thought it worth while to make trial of its capabilities. With each of these fluids a rabbit was injected, from the aorta; and another rabbit, killed at the same time as those which were made the subject of experiment, was kept, for the sake of comparison. They were all exposed to the air, in an open court; being merely protected from the weather by enclosure in a wicker basket, loosely covered with oil-cloth. At the end of three weeks, they had become putrid; and we could not perceive that, in any one instance, decomposition had been materially arrested. We were aware that arsenic and the bichloride of mercury both possessed considerable antiseptic powers. A solution of the former had indeed been tried with success at Guy's Hospital, in the previous year; but the poisonous qualities of these substances rendered them, in our opinion, as well as in that of others more nearly interested in their employment, decidedly objectionable.

The total failure of our attempts had nearly discouraged us from proceeding further, when it occurred to us that the preservative powers which exist in certain hydrocarbonous fluids offered some probability that they might be turned to account in the prosecution of our object. Creosote and pyroxylic spirit more especially attracted our attention; and as the former was too expensive to admit of its having been advantageously used alone, we combined it with thrice its bulk of solution of gum-arabic. Two rabbits were injected; the one with pyroxylic spirit, the other with this mixture; and exposed to air, with protection from the weather, precisely in the same manner as was practised in the former experiments. At the end of two months, from the 30th of November, when the injection was performed, these rabbits were examined at Guy's Hospital, and declared by all who saw them opened, to be as perfectly free from putridity, and

as fit for all the purposes of dissection, as on the day when they were killed. It should be stated, that in these instances, as well as in the experiment with infusion of galls, a portion of fluid was injected *per anum.*

Having thus far perfectly succeeded, we resolved to obtain permission from the hospital authorities to make a direct experiment on the human subject, as soon as the weather became warm enough to test our method with sufficient severity. In the course of the spring, we were permitted to avail ourselves of the following opportunity:

On the 15th of May last, a convict at Woolwich, 23 years of age, died of inflammation of the bowels; and on the 18th, his body was sent, by order of the inspector of anatomy, to Guy's Hospital, for dissection. It was neither œdematous, nor in a state of decomposition; and although the integument was somewhat fat, it was, upon the whole, in a fair condition for anatomical purposes. On the 21st, a gallon of pyroxylic spirit was injected into the aorta; and the body was placed in a water-tight shell, or trough, made of slate, and loosely covered with a wooden lid. This trough was deposited in a cellar, the stone floor of which was about two feet below the surface of the ground. On the 29th the lid was removed, for the first time, and the body was found to be perfectly fresh. On this occasion, the flesh of the extremities was remarked to have become somewhat firmer than when the injection was first made. From the 29th of May to the 12th of June, the subject was examined, by removing the lid of the trough every two or three days; and no change was perceptible until the latter date. At that time the only sign of alteration was the appearance of two or three brown streaks—evidently veins—on the inside of the thighs; and a separation of the cuticle of the hands from the true skin, which began to assume a greenish hue. Every other part of the body was perfectly preserved, and of natural colour. There was no putrid odour on opening the lid of the trough, but the characteristic smell of the pyroxylic spirit was in some measure passing off. An incision into the middle of the right thigh, such as would be made in operating for popliteal aneurism, showed that the fat, muscles, blood-vessels, and nerves, were in a complete state of preservation. It should be observed, that ever since the injection of the subject the weather had been that of established summer; and that a second body received from Woolwich, was so decomposed in three days after its arrival as to be totally unfit for dissection. On the last examination, as well as on two or three previous occasions, fluid was observed to occupy the bottom of the trough, and this it was thought advisable to remove: it was likewise determined to throw another quart of pyroxylic spirit into the aorta.

On the 24th of June, the body was removed to the dissecting-room, and placed on the table, for the purpose of being thoroughly dissected. With the exception of a greenish appearance on the outer part of the left thigh, and the brown streaks already mentioned, it appeared, when brought into the light, perfectly preserved. The skin on the back of the hands, instead of putrefying, had dried, and become transparent; while the greenness of the left thigh proved, on incision, to be quite superficial. The dissection was undertaken by eight gentlemen, and completed by the 13th of July; and it is testified by them all that every anatomical purpose was as fully answered as if the subject had been quite recent. The various parts, on being laid open, were of natural colour and of firm texture. The tendons and ligaments were silvery and white, and the nerves had lost none of their tenacity. The pectoral muscles alone formed an exception to the natural colour which was elsewhere maintained: this appeared to be attributable to the macerating effects of a wetted cloth that had been laid upon the breast, to prevent evaporation through the aperture by which the injection had been accomplished. The parts which were exposed by dissection gradually dried; changing, in the course of a day or two, to a dark colour, and instead of putrifying, becoming hard. The brain, although it had retained its form, was soft, and semi-putrid, and unfit for demonstration: it must be borne in mind, however, that had the head been opened six days after death—at which period the subject was injected—this probably would have been the case. With the above exception, the viscera were all perfectly preserved: in proof of which, one

of the kidneys, appearing, in colour and consistence, quite recent, was removed in the beginning of July, and after maceration in warm water, in the usual manner, was injected with wax. This experiment was made in order to ascertain whether the spirit produced thickening, or any other alteration, in the inner coat of the blood-vessels; which was found not to be the case, as the wax had fully penetrated the tissues of the organ.

Of the gentlemen engaged in the dissection of this subject, one complained that he at first suffered headache from the odour which it exhaled; and some, who were not so engaged, considered this to be more disagreeable than that of putridity. The same opinion is sometimes expressed with respect to the odour of parts that have been macerated in spirit of wine. Some allowance in favour of the pyroxylic spirit should be made on the score of novelty; and since its vapour is not poisonous nor injurious, any more than that of spirit of wine, it is to be presumed that the student would soon become accustomed and reconciled to it. In a first trial, upon the human subject, of the antiseptic powers of this fluid, a natural desire existed, on our parts, of watching its progress, and of noting such changes as might gradually occur. This led to the necessity of opening frequently the lid of the trough: and it has already been remarked, that this by no means accurately fitted the trough itself. The pyroxylic spirit being of a very volatile nature, it is obvious that its preservative qualities were much diminished by this proceeding. It is, therefore, not too much to expect that in an air-tight vessel a subject thus prepared would not exhibit even those superficial changes which took place in this instance, and would be preserved for an indefinite period.

The advantages of employing pyroxylic spirit are, first, its extreme fluidity, in consequence of which it may be thrown into the minutest vessels. Secondly, its freedom from colour. Thirdly, its cheapness; for a gallon is sufficient to inject a full sized subject: and even with the present limited manufacture of it, it is only half the price of alcohol; while it possesses infinitely greater antiseptic powers, and is, in common with that fluid, miscible with water, in all proportions. Fourthly, its innocuous nature, and its freedom from any corrosive action upon steel instruments. We are not aware that there is any material disadvantage in its employment: the odour, it must be admitted, is more or less disagreeable to different individuals, but not so much so, to the generality of persons, as that of the putridity which it serves to prevent. Of this fluid, which must not be confounded with pyro-ligneous acid, or with pyro-acetic spirit, a full account may be found in the "Annals of Philosophy," N. S. viii. 69.—*Guy's Hospital Reports, Oct.* 1839.

PATHOLOGICAL ANATOMY AND GENERAL PATHOLOGY.

6. *Distinct Small Pox, followed in six weeks by an attack of the same disease in its confluent form, and terminating fatally.*—Dr. Renaud has recorded in the *Révue Médicale*, (February, 1839,) the following remarkable example of secondary small pox. A little girl, ætat. 28 months, was seized on the 24th of August, 1838, with small pox of the distinct form, which passed through its regular periods. The pustules left several well-marked cicatrices upon the face and neck.

On the 20th of October following the child suddenly lost its appetite, became dejected and morose, and complained of pains in the loins and hip. On the night of this day, as well as on the two following, she had convulsions. On the evening of the 23d some red spots were observed on different points of the surface; these increased in number and size on the 24th, and on the 25th became so well marked, as to leave no doubt as to the true variolous nature of the eruption. Professor Pelletan was now called in consultation, and assured himself of the reality of the first eruption, the cicatrices of which were still visible, as well as of the nature of the pustules. From this date the symptoms continued to increase, the eruption being confluent upon the face. Death took place on the night of

the 30th. What was still more singular in this case was, that the grandmother on the maternal side had been twice affected with small pox, and the mother, who was aged 26 years, and who nursed her child, believing herself out of all danger in consequence of having had small pox in her infancy, took the disease in its confluent form some days after the death of her infant, and died on the seventeenth day.

Remarks.—The occurrence of secondary small pox is indisputable, but the proportion in which it takes place requires further data to enable us to determine. Mr. Marshall, in a paper in the *Lancet*, states that of 896 cases of small pox, ten were cases of secondary, making this last so frequent as nearly 2½ per cent. Another writer, however, in the same journal, refers to 896 cases in which there was not a single case of secondary. The most authentic information we possess on the subject is in reference to the Würtemberg epidemic. In this, 634 persons were attacked with *true* small-pox, of whom thirty-nine had been affected with *true* small-pox at some previous period, being a proportion of one in sixteen. The nature of the first attack was determined partly from the evident traces of confluent small-pox on the body, and partly from the testimony of the medical men by whom the patients had been attended. Fourteen of the thirty-nine fell victims to the second attack.

In the epidemic described by Möhl, 153 out of 988 persons had a second attack of small-pox; thirty-one out of the 153 died. Here, however, the evidence of the first attack is far from being so precise as during the Würtemberg epidemic.

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7. *Enormous accumulations of fœcal matter in the Rectum.*—A woman, ætat. 50, was troubled with habitual diarrhœa; frequent desire to urinate, which could not be effected without pain, and the discharge was guttatim. Various remedies were resorted to without relief, and after upwards of six years' suffering, her medical attendant for the first time made an examination per anum, and to his great surprise found an accumulation of fœcal matters as large as an infant's head. This was removed, and weighed four pounds. After this the bowels became regular, and the discharge of urine free, and unattended with pain.—*Gaz. Méd. de Paris*, July 20, 1839, from *Medicinische Annalen.*

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8. *Effusion of Blood into the Substance of the Brain.*—Dr. Greene exhibited to the Pathological Society of Dublin a specimen of sanguineous extravasation into the right posterior lobe of the brain; the blood was coagulated, and the clot extended into the cornu ammonis, the surrounding cerebral substance being completely softened and discoloured. The patient was an adult female, who, while washing some linen, was suddenly seized with pain in the head and vertigo, and, after a few hours, with insensibility and coma, in which state she remained until the next day, when she recovered some slight degree of consciousness. She was admitted into hospital, with loss of intelligence, speech, and hearing; the left arm and leg were paralysed and insensible. Under treatment, she recovered a certain degree of sensibility and some slight power of motion; but, about the ninth day, she began to manifest symptoms of cerebral irritation: the scalp and face were hot; the carotid arteries pulsated strongly, and delirium was present. Upon the fifteenth day an eschar formed over the sacrum, and spread rapidly; she died very soon afterwards. Dr. Greene considered that, in this case, there was most probably a very small vessel opened in the first instance, so that the effusion of blood being inconsiderable, the patient, under treatment, improved a little, but manifested the symptoms of cerebral irritation more decidedly, according as the extravasation became more considerable. Dr. Greene considered that this case supported the opinion of Cruveilhier, that the patient, who may have recovered from a primary apoplectic seizure, may subsequently die of cerebral irritation in about eight or ten days.—*Dublin Journal, July*, 1839.

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9. *Laryngismus Stridulus.*—The pathology of this disease seems still unsettled. Whilst some physicians maintain that the symptoms entirely result

from enlargement of the thymus, others regard it as a spasmodic affection. It seems to us probable that enlargement of the thymus is not always present, but that it is a frequent cause of the disease. This view is sustained by the following cases, recorded in the *Dublin Journal* for July, 1839.

Dr. Thomas Beatty exhibited at a meeting of the Dublin Pathological Society, the recent parts from a child who had died of the disease in question. The rima glottidis was closed, so much so, that when the larynx was removed, from the body, and held up between the eye and the light, there was not the slightest appearance of an aperture; the thymus gland was free from disease; there was a considerable degree of subarachnoid effusion, with vascularity of the pia mater and cerebral congestion. The patient was ætat. $2\frac{1}{2}$, and had suffered from the disease, in a greater or less degree, for twelve months, and at length died convulsed.

At a subsequent meeting of the same society, Dr. Montgomery exhibited the thymus gland of a child, ætat. eight months, who died suddenly with the symptoms of laryngismus stridulus; it was excessively vascular, and in some parts very much indurated. According to Haugsted, the weight and measurement of the thymus gland in an infant of that age are as follow:—length, two and a-half inches; breadth, one and a-half inches; weight, twenty-seven grains. In Dr. Montgomery's case, the gland measured three one-fourth inches in length; two one-fourth inches in breadth; five-eighths of an inch in thickness, and weighed four drachms; the larynx presented no morbid appearance, but close to the commencement of the œsophagus were two small ulcers; the right ventricle of the heart was found, as Kopp has already remarked, empty and puckered; the veins of the neck were turgid, and a large quantity of serous effusion existed at the base of the brain. The child had been weaned at the age of three months, and had been subsequently, in Dr. Montgomery's opinion, over-fed—a circumstance tending materially to favour the development of the disease.

About five weeks after birth, it had been seen by Dr. Aldridge, who, from observing the tumefaction at the lower portion of the neck, warned the parents that the child would, most probably, be attacked with spasms. The child had experienced several attacks before that which proved fatal.

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10. *Sacculated Condition of the Bladder.*—Dr. Colles exhibited to the Pathological Society of Dublin the bladder of the late Dr. Percival, who for thirty years had been subject to urinary irritation.

Dr. Croker was aware that fifteen years ago this irritation was so troublesome, that when he had a call to make water, he was instantly obliged to go and empty his bladder. He did not, however, make any particular complaint of it until June last, when the calls to make water became exceedingly frequent and painful. At this period, too, he perceived, for the first time, that some blood escaped with the urine. This recurred frequently during the latter part of his life, but not to any great amount; and he used to observe to Dr. Colles, that after a discharge of blood in this way, he thought he was easier for some time, and had less distress in passing water. The blood always came away with the urine, and not before or afterwards, and was occasionally coagulated. Dr. Percival had a dislike to surgical operations, and would not permit the introduction of an instrument; he said he was content to bear his suffering, and would have it merely alleviated by some mild and simple remedy. The disease, however, gained ground, and latterly he was unable to make water except in the erect position. Hence, when he had a call, it was necessary to take him out of bed to put him standing up, and then by passing his finger under the perineum, and pressing forwards, he attempted to empty his bladder. It was a remarkable fact, that he was aware that he had two chambers in his bladder, and he mentioned the matter frequently to Dr. Colles. From the cast of the bladder which he presented, Dr. Colles said it was obvious that the bladder had in fact three chambers. The shape of the organ was very singular, and during life had contributed to throw a great deal of obscurity over the complaint. Whenever Dr. Percival permitted an external examination, a tumour could be generally felt

towards the right side of the abdomen, rising towards the navel. This could not be always felt, but when it could, it was in general very tense and firm, and communicated to the finger the feel of a solid body; at other times it was more flaccid. Dr. Colles thought at one time that it was some tumour which had formed in the pelvis, and that it was the cause of the distress felt by Dr. Percival. In this, however, he was deceived, for the tumour was caused altogether by the bladder. He was fully aware that on various occasions the bladder was over-distended, and that no urine had been passed for a considerable time, but he was unwilling to urge the introduction of an instrument, not from any dislike he had to catheterism, but he had frequently observed, that in old persons, who labour under no affection of the bladder except occasional distension, if an instrument be introduced, the patient will most probably require it again, and after a few introductions cannot dispense with it at all. The best plan which Dr. Colles knew was, to let the patient alone, and leave the matter to nature, by which the evil was in general remedied in a very short time. There was another circumstance which prevented Dr. Colles from using instruments. He had long entertained a suspicion that Dr. Percival was labouring under fungus of the bladder, and in such cases he always has a dread of employing the catheter. He recollected well the case of a gentleman, who came up to Dublin a few years since, labouring under fungus of the bladder. He went to different surgeons, and was sounded by each, and his bladder is now in the Museum of the College of Surgeons, with its entire cavity filled with a fungous mass. For these reasons Dr. Colles had never pressed the introduction of an instrument. He would now exhibit the bladder. The orifice of the urethra was surrounded by fungous excrescences, which, however, were not very remarkable in point of size. One of these was just at the orifice. The prostate gland was not particularly enlarged or indurated. The muscular coat of the bladder was fasciculated, or columnar, and there were several pouches formed in it from protrusion of the mucous membrane. On opening the bladder, three or four clots of blood were found in it, but no calculi of any kind. The appearance of the bladder, divided into different chambers by the protrusions of the lining membrane, was extremely curious, and might have led to mistakes in using instruments. Dr. Colles said that gentlemen would perhaps have some idea of the torture Dr. Percival endured by recollecting, that while in his senses he never made water except while standing, a position which was most painful to him, owing to the state of the hip joints. It was melancholy to reflect on the agony this amiable man must have endured, particularly during the last months of his existence.—*Dublin Journal*, July, 1839.

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11. *Cysts of the Bladder.*—Mr. Adams said that the specimen he was about to present was not similar to that exhibited by Dr. Colles, although it might be said to belong to the same class of affections. It was a bladder with a single and solitary cyst in the upper fundus. The preparation showed the cyst and that peculiar arrangement of the muscular fibres to which the French anatomists have applied the term "columnar bladder." This condition of the bladder may be produced by different kinds of obstruction, but more particularly by chronic strictures; in the case under consideration it had been produced by stricture. The subject was a man who had been three or four years in the House of Industry; he lay constantly on his back, and for some weeks before death, never passed urine, except with the aid of instruments; but he never complained of any pain in the region of the bladder; the bladder seemed to have lost much of its contractile power, so that when an instrument was introduced, he used to cough, and in this way expelled the urine *per saltem*. It was generally observed that the last drops voided had a fœtid smell, and were apparently blended with purulent matter; he also had a constant desire to pass water after the instrument had been withdrwn.

Mr. Adams presented a drawing showing the colour and villous appearance of the mucous membrane; in some parts it was red and vascular, and in others

it was of that peculiar slate colour so frequently observed in chronic inflammations of the mucous membrane.

Mr. Adams said he concurred in the views taken by Dr. Colles as to the abuse of instruments in cases of simple retention in old persons; but in this instance the catheter had not been employed until the power of the bladder was wholly lost. There were several preparations of the description he had shown in the Museum of the College of Surgeons, particularly one very remarkable one belonging to a patient who had been under the care of Mr. Kirby. One of the most interesting circumstances connected with the history of cysts in the bladder arose from their bearing on calculous formations. Calculi very often became entangled and lodged in them, so as to occasion great difficulty in the successful operation of lithotomy. This, however, had been disputed by Sharp and Bowyer, who seem to think that it is only an excuse for bad surgery. It could not, however, be denied that stones were sometimes entangled in them. Mr. Peile performed the operation for lithotomy, in a case in which the calculus was lodged in one of those cysts; it retarded the operation considerably, but he succeeded in extracting it. Mr. Adams exhibited this calculus; the part which lay in the cyst, and that which projected into the bladder, were separated by a distinct line of demarcation. Mr. Peile saw another case of the same kind which did not terminate so favourably; great difficulty was found in extracting the stone, and the patient died of peritonitis forty-eight hours after the operation. A case has been detailed by Sir Benjamin Brodie in his lectures, in which the stone was adherent to the cyst, so that he was obliged to introduce a blunt pointed bistoury and separate the connection, before he could remove it.—*Ibid.*

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12. Mr. Ceeley's *Experiments with Small-Pox.*—On the 1st of February 1839, Mr. Ceeley inoculated with small-pox matter (*variola discreta*), of the seventh or eighth day, three young heifers; a fourth was at the same time vaccinated.

Mr. Ceeley made seven punctures, and introduced fourteen points near the left *labium pudendi*, and on the same day inserted two setons with matter from the same subject. On the ninth day after this process, he vaccinated the same animal on the right *labium pudendi*; with fifth, sixth and seventh day's lymph from a child, in seven punctures, with fourteen points; and below the pudendum in four punctures, with eight points. On the tenth day after the insertion of the variolous matter, one of the punctures near the posterior margin of the left *labium pudendi* had assumed the form of the natural vaccine vesicle. By gently removing the central irregular crust, and carefully puncturing the cuticle, he was able, in the course of an hour, to charge thirty-eight points with lymph, and on the same and subsequent days to use part of it on children and adults. On the thirteenth day the small-pox vesicle was more inflamed and florid; this was the fifth day after the insertion of the vaccine lymph, at which time all the eleven punctures were converted into effectual vesicles; from these he took fine clear lymph, and used it on children and adults. Both the variolous and vaccine vesicles subsequently ran nearly a parallel course; so that on the twenty-sixth day of the former, and the seventeenth day of the latter, the scars of both appeared perfectly similar.

To obviate objections which might arise from the insertion of the vaccine lymph on the ninth day after the inoculation with the variolous matter, Mr. Ceeley re-inoculated a sturk on the 15th of February with small-pox matter, of the seventh or eighty day, on the *labium pudendi*. He made eight punctures, which were deluged with the variolous fluid from the capillary tubes. On the fifth day the four upper punctures were enlarged and elevated; the other four were less so. On the sixth day all presented the appearance of the vaccine vesicle. From one of them he took lymph with difficulty, and scantily charged thirty-nine points. On the eighth day he again took lymph from the vesicle opened on the sixth. On the ninth day the vesicles were enlarging, and he again opened carefully the first vesicle and charged twenty points. On the

tenth day the four lower vesicles were increasing, and from them he charged twenty-seven points. After this time the brown crusts appeared, and the disease gradually declined. This animal was subsequently inoculated, both with variolous and vaccine matter, but no result followed.—*Report of the Vaccination Section of the Provincial Medical and Surgical Association.*

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13. *On Pus in the Blood, in diseases attended by Inflammation and Suppuration.* By George Gulliver, Assistant Surgeon to the Horse Guards.—In the prosecuting an inquiry in which I have been long engaged, concerning inflammation and suppuration, I soon perceived the necessity of carefully examining the blood in these affections, and particularly in inflammatory fevers and hectic.

The result has been the detection of pus in the blood in almost every instance in which there was either extensive suppuration or great inflammatory swelling, without a visible deposition of pus in any of the textures of the body; and the contamination of the blood by pus appears to me to be the proximate cause of the sympathetic inflammatory, sympathetic typhoid and hectic fevers. The profession is now familiar with cases in which pus has been found in the veins, particularly after surgical operations, and in uterine phlebitis; but, although the humoral pathology has of late years begun to assume some of its ancient importance, I am not aware that any writer has attempted to demonstrate the dependence of the fevers under consideration on the presence of pus in the blood.

I have detected pus in the blood, by examinations very simple—partly chemical, partly by the microscope. Water has a rapid and energetic action on the blood-corpuscles: now, the globules of pus undergo no change after being long kept in water; accordingly, if the suspected blood be mixed with water, the blood-corpuscles will soon become invisible, and any globules of pus that may be present will subside to the bottom of the vessel, and may be easily seen, and have their characters determined, with a good microscope. Ammonia instantly renders the blood-corpuscle invisible, while that of pus is acted on but slowly by the alkali; and the different action of acetic acid on pus and blood is equally remarkable. Hence, I have employed these agents advantageously in conjunction with the other means; and I have also seen pus-globules in the blood, though rarely, without any preparation. With water, however, the examination is most easy, if the observer be thoroughly familiar with the microscopic characters of the fluids under examination. A good instrument, nevertheless, is necessary; and the admirable deep object-glass of Mr. Ross is the one I have principally employed. It is hardly necessary to add, that chyle-globules are not likely to be mistaken for those of pus, since, independently of other distinctions, the medium diameter of the latter is at least 1-2666ths of an inch, which is above twice that of the former.

Exp. 1. A weak solution of corrosive sublimate is injected into the subcutaneous cellular tissue of a dog's thigh. Great swelling of the limb. Death in twenty-four hours. In the cellular tissue of the thigh, no purulent deposit. Several pus-globules detected in blood obtained from the heart.

Exp. 2. A dog. Both tibiæ injured by operations; great swelling of the limbs; violent fever; death after forty-three hours. Fibrine found effused into the cellular tissue of the extremities, mixed, in one, with a very little purulent matter. Blood from the vena cava contained numerous globules of pus.

Exp. 3. An irritating fluid; injected into the peritoneum of a dog. Great thirst; refused food; died in three days. A large quantity of coagulated lymph and sanguinolent serum, with some pus, found in the belly. In blood from the inferior cava vein many globules of pus were seen.

Exp. 4. Two ounces of pus injected into the left pleura of a dog; carefully confined there; thirsty and feverish for fifty-five hours. Then killed; one ounce of fluid, almost entirely serum, found in the pleura, and some fibrinous exudation on the membrane. Blood from the heart and vena cava, found to contain several pus-globules.

Exp. 5. A dog; four and a half ounces of pus injected into the peritoneum; wound carefully closed; death in thirty-seven hours. Only nine drachms of a

sero-sanguinolent fluid found in the peritoneum, and much coagulated lymph on the membrane. Pus detected in the blood.

Exp. 6. A dog; half a drachm of pus, mixed with water; half an ounce gradually injected into the crural vein. Some fever followed; refused solid food for two days; recovered at the end of a week. A similar experiment with pus on the other crural vein; similar symptoms, and perfect recovery.

Exp. 7. A dog; six drachms of pus injected into the crural vein. In a few hours, very weak, stupid, thirsty, and refused food. In thirty hours almost insensible; respiration was hurried. Death in thirty-six hours. In the blood of the inferior cava some pus-globules were readily detected.

Case 1. A girl died of confluent small pox on the ninth day of the disease. Great swelling of the integuments. In the blood of the right ventricle, numerous pus-globules.

Case 2. A woman had confluent small-pox, uncomplicated with erysipelas or inflammation of the viscera. On the eighth day, in some blood drawn from the arm, several pus-globules were found.

Case 3. A male child, ætat. 15 months, died on the ninth day of small-pox. Only a few imperfectly developed pustules appeared. There was considerable swelling in the face, slighter in other parts. *Post-mortem:* a small quantity of a white opaque fluid might be squeezed from the cut surfaces of the lymphatic glands of the neck and groin, having the characters of pus. In some blood from the right ventricle and inferior cava vein, pus was detected.

Case 4. A woman died of puerperal peritonitis. The peritoneum contained a large quantity of coagulated lymph, serum and purulent matter. Pus in blood from the right ventricle of the heart.

Case 5. J. Green, ætat. 27, admitted into the hospital with an ulcer of the leg. In seven days the limb began to swell; hardness in the femoral vein; some redness in the absorbents on the inner side of the thigh. The swelling increased gradually; he had, first, pain in the head, thirst and quick pulse; then purging, pain in one wrist, with restlessness, incoherency of speech and offensive breath. Low muttering delirium, accelerated respiration and coma, preceded his death on the twelfth day after admission. *Post-mortem:* the large veins of the limb were occluded throughout by firm clots of blood, mixed with pus and coagulated lymph, and the lining membrane of the femoral vein was in many places red and coated with fibrine. Several purulent deposits presented in the sheath of the femoral vessels, and in the intermuscular cellular substance. In blood from the right ventricle and vena cava, globules of pus were found.

Case 6. James Hawke, ætat. 22, superficial wound of the tibia; pain and swelling. Pus in the subcutaneous cellular tissue. The case terminated fatally. Dissolution was preceded by subsultus, collapsed face, accelerated breathing, hiccough and coma. The swelling was found to be produced by effusion of fibrine and sanguinolent serum. Pus-globules in blood from vena cava.

Case 7. M. Jackson, ætat. 42. Erysipelas of the face, succeeded by jaundice and effusion into the pleura. Listless and low, with accelerated respiration. Death in six days. An ounce of turbid serum, with a little purulent matter in the right pleura; eight ounces of sanguinolent serum in the left. Blood from the larger veins greatly contaminated with pus.

(Notes of four other cases are recorded.)

The preceding instances by no means comprehend the whole number in which I have found pus in the blood. The observations of Dr. Davy tend to confirm their accuracy. He detected pus in the blood of consumptive patients, after my general results had been submitted to him, but before I had turned my attention to the state of the blood in phthisis. He has lately informed me that he has found pus in the blood in seventeen instances after death, in sixteen of which there was declared suppuration, and in one none could be detected; in the latter, the patient died of acute inflammatory disease. The opinion has often been expressed in this country, that the globules of pus are nothing but those of blood, modified by the inflammatory process. On the continent, M. Gendrin adopts

the same theory, supported by very ingenious experiments, which have been generally considered conclusive on this subject.

I have repeated the experiments of M. Gendrin with great care, and although I see no reason to dissent from the above conclusion, I have not observed the phenomena related in his work. By cauterising the web of a frog's foot under the microscope, or by elevating on a lancet the edge of a wound in the part, he assures us it is as easy to see the blood-particles gradually transformed into those of pus. I have not succeeded in this observation. After repeated trials I could not induce suppuration in batrachian reptiles.

With regard to the conversion of clots of fibrine into pus (according to M. Edwards,) some experiments render it extremely probable that the matter often found in the centre of such clots, in the heart and great vessels, is nothing more than softened fibrine, which presents neither the chemical nor the microscopical character of pus.

In idiopathic or traumatic phlebitis, the manner in which pus may become mixed with the blood is obvious enough. There are cases to which the term phlebitis is commonly applied, which are probably not examples of inflamed veins. The total failure of inflammation in them would seem to have left open their wounds, so as to favour the entrance of pus into them from the neighbouring parts.

I think my experiments will render it probable that suppuration is a sort of proximate analysis of the blood. Suppuration would appear to be a physiological rather than a pathological phenomenon—pus being an excrementitious discharge—a part of the blood which has become effete and noxious during the reparative process.

With regard to the correct observation of Müller, that the smaller capillaries have only the diameter of a blood-corpuscle, I shall show that these vessels become sufficiently enlarged during inflammation to contain a row of pus-globules.

If it should be remarked that pus is often formed without any obvious addition of fibrine to the neighbouring parts, it should be recollected that this is not a healthy, but a diseased form of suppuration; and the distinction and explanation are not difficult.

It remains to deduce the conclusions from the experiments and observations related in this paper.

The term *Suppurative Fever* is not new, and its signification is probably now extended; for it seems to be an appropriate one for the different forms of constitutional disturbance under consideration. If the presence of pus in the blood, and the fever in these cases, be not related as cause and effect the coincidence would appear to be no less interesting than remarkable.

In small-pox, it is a popular belief that "the striking in," as it is termed, or suppression of the pustules, is a bad symptom; and this is so far true, that the worst cases of this disease are those in which there is great swelling of the integuments without the due formation of pus in the usual situation. In every instance in which I have examined it, I found pus in the blood of patients affected with small-pox.

In the fourth and fifth experiments the pus which was injected into the serous sacs would appear to have been absorbed. A more careful inquiry, however, would be requisite to warrant this conclusion.

I have related instances of pus in the blood, independently of suppuration out of the vessels; this fact appears to be of some importance, for it must be inferred that the pus was not absorbed, but formed in the blood.

Of the inflammatory, hectic, and low typhoid fever, it seems hardly necessary to observe that they appear to be all comprehended under the common designation of constitutional irritation, in the interesting work of Mr. Travers, which I had not read till my attention was directed to it by Mr. Liston, after this paper was written. Under the term of typhoid, I have included that grave form of fever in which the vital powers sink rapidly, as I believe, from somewhat sudden

and extensive mixture of pus with the blood, as sometimes occurs after operations on veins, or amputations, or even independently of wounds.

I cannot conclude this paper without expressing a hope that it will lead to a still more careful and extensive examination of the blood in various diseases than has hitherto been attempted. The microscope may become as important an instrument to the pathologist, and even to the medical practitioner, as the stethoscope. If my results should be confirmed, it is hardly too much to expect that some important discovery, particularly in diagnosis, may be made by a patient investigation of the blood in many malignant diseases, such as cancer: it is not long since the urinous fever, as it is called, was found to depend on the accumulation of urea in the blood.—*Lancet*, Sept. 21, 1839.

MATERIA MEDICA AND GENERAL THERAPEUTICS.

14. *Clinical Experiments on the Emetic and Sudorific Properties of the Hydrated Sulphuret of Antimony, with excess of Sulphur.*—From a series of experiments of which the individual results are given in a table, Dr. M. A. Toulmouche draws the following conclusions on the properties of this salt:

1. This preparation of antimony acts with greater certainty as an emetic, when given in doses of one or two grains, than when exhibited in larger quantities.

2. It induces vomiting in smaller doses than kermes.

3. Its emetic action, although less uncertain than that of kermes, is still far from sure, inasmuch as it is only developed in somewhat more than half the cases of its administration.

4. It acts much less frequently as a purgative than as an emetic; whereas the contrary is true of kermes.

5. Like the last named compound, it may be given with impunity in large doses, and in other affections besides rheumatism and pneumonia; in these cases its emetic and purgative effects appear to diminish in proportion to the increase of the dose.

6. The sudorific properties attributed to it by writers on materia medica are by no means incontestable; in 102 cases of its exhibition it acted on the skin thirteen times only.—*Br. and For. Med. Rev.* from *Gaz. Méd. de Paris*, April, 1839.

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15. *Styptic Action of Creosote.*—Drs. Muller and Reiter have lately instituted a series of experiments for the purpose of ascertaining the styptic properties of creosote, when applied directly to a bleeding surface. The hæmorrhage from the division of the crural vein in dogs was found to be arrested by the application of a plug of cotton, which had been well moistened in the creosote.

In the case of divided or wounded arteries, it was necessary to keep up a certain degree of compression for some time, in order that the creosote might be able to act upon their parietes. Upon examining the cut arteries afterwards, they were always found to be quite closed or obliterated at the part, exhibiting outwardly an umbilical depression, which corresponded with a conical shaped coagulum within: the coats of the vessel were usually inflamed for the extent of an inch or so.

The creosote was found to be a more decided and secure *hæmostatic* remedy than the far-famed aqua Binelli. *Creosoted water* sufficed to stop the bleeding from an oozing surface, when no large vessels had been divided. When creosote was injected into veins, the blood was found to be instantaneously coagulated.

Professor *Schneider*, of Munich, had recently an opportunity of using creosote as a styptic in one of his patients. An old man was subject to most profuse hæmorrhage from the mouth. He had lost several pounds of blood, and a variety of means had been ineffectually tried to arrest the hæmorrhage.

M. *Schneider* made him fill his mouth with water charged with creosote (*eau creosotée*); after the third mouthful, the bleeding ceased, and did not afterwards return.—*Med. Chirurg. Rev., from Schmidt's Jahrbucher.*

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16. *Formula for Internal Administration of Turpentine.*—℞.—Olei terebinth. ʒiss or ij; Magnesiæ carbonat. ʒj. Tere simul et adde Aq. menth. sat. ʒv; Syrup limonum ʒij; Spts. lavend. comp. ʒij. Misce; sumatur pars quarta ter die.

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17. *Citrate of Quina.*—This is recommended by Prof. Beraudi in intermittents as equal, in one-third the dose, to the sulphate in effect, as being more easily borne by the stomach, and further as causing less congestion of the brain. —*Bull. Gén. de Thérap.* from *Schmidt's Jahrb.*

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18. *On the Medical Properties of Aloes.* By G. G. Sigmond, M. D.—The operation of the different varieties of aloes upon the system, though differing in intensity, is precisely similar as to its nature; although they are all perfectly soluble in fluids, whether of an aqueous or of a spirituous kind, they do not seem so immediately to be dissolved in the human stomach, and hence the slowness of their operation, generally speaking twelve or sixteen hours elapsing before their effect is decidedly exhibited. It has been, and is still an interesting question upon what viscus does aloes more immediately act? Whilst some confine its power to the rectum, others believe its agency to be upon the liver; by some it is not believed to be entirely dissolved until it has reached the receptacle of the residue of the ingesta, which cannot be incorporated into the system. Its influence upon the liver is certainly marked by the peculiar condition of the evacuation, which shows evidently, both by its colour, by its odour, by the peculiar pungent effect upon the anus, that an increased quantity of bile has been poured forth. That it acts upon the vena portarum is fairly to be deduced from the very peculiar state into which the hæmorrhoidal veins are thrown by the congestions which so rapidly occur after a dose of this drug has been taken, and also by the condition of the uterine vessels which has led to its employment as an emmenagogue. It is not easy to ascertain whether this specific influence upon the venous system is the cause of the cathartic power possessed by it; we find, however, that some connection exists, and that the more the large intestine is stimulated to pour forth its contents by its action, not by the largeness of its dose, the greater is the relief afforded to the sanguiferous system; hence its great value in determination of blood to the head, in venous congestions, and its superiority over medicines of somewhat a similar nature, and hence, too, the caution necessary in its administration. The slowness of its action renders it sometimes to us of much importance, from our power of giving it in some states in which it is to be given at night, and its operation is not required until the morning; the smallness of the volume in which it may be used, the shape of pill into which it is so easily made, and which disguises so well its bitterness, are all of them subjects worthy our consideration.

From the circumstance of the alkalies and the carbonates rendering it more soluble, it is often combined with them, and we are hence furnished with weapons which, used with skill and care, enable us more certainly to combat disease. Thus, with soap, although we may diminish its intensity of action, we render it more quickly purgative. If, with Dr. Hamilton, we cannot quite agree that it is almost a universal remedy, that the most formidable maladies will yield to its effects, still it is to be acknowledged that in a vast number of chronic disorders it is invaluable; that in the obstinate constipation to which the artist, the student, the aged, and the sedentary are subject, from inactivity of the liver and of the sanguiferous system, it is, under the control of the skilful medical man, a drug which deserves the highest commendation; and though from its abuse in the vast number of quack medicines and patent pills, it has been the source of mischief, and has been occasionally condemned, we possess

nothing that we could substitute for it that has more claims to our consideratfon.—*Lancet*, August 11, 1838.

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19. *Medical Properties of Copaiba.* By G. G. Sigmond, M. D.—The physicians of the last century entertained a very high opinion of balsam of copaiba as a cure for diseases in which it is now seldom if ever employed. Among other morbid states in which it was recommended by some, but objected to by others, was consumption; and there were many individuals of high eminence who took up different views of its power. Amongst those who were sanguine as to its effects was Dr. Fuller, the author of a work very highly prized in its day, entitled, "Ars Præscribenda, sive Pharmacopœia Extemporanea Reformata;" his language in the praise of the remedy is of the most laudatory kind. Hoffman, Munro, Simmons, also joined in extolling it; on the other hand, Pringle, Rosenstein, Tissot, Fothergill, and Quarin, thought it even prejudicial. The consequence of this division of opinions has naturally been to look to other means; in the language of Murray, "Tutissimum igitur est inter vituperium et laudem virtutis antiphthisicæ balsamorum medium procedere." In modern days some of our eminent physicians have given the balsam of copaiba in chronic affections of the larynx and trachea; and it would altogether seem to exert a powerful influence upon mucous membranes, restoring their power of healthy secretion. Dr. Armstrong was one of the most conspicuous of those who recommended it; he seemed to think it exerted a specific effect on the mucous membranes. Dr. Fosbroke, of the Ross Dispensary, Herefordshire, entertains a high opinion of copaiva in affections of the mucous membranes of the pharynx and larynx of a low, old, and chronic character.

Mr. Selwyn, of Ledbury, a leading general practitioner in that county, employs copaiba with rapid success in the lingering muco-purulent secretion in the last stage of mucous catarrh, in elderly persons, upon the same principle as he would employ it in blenorrhœa.

Dr. Hastings, of the Worcester Infirmary, in his very valuable "Treatise on Inflammation of the Mucous Membrane of the Lungs," thus expresses himself: "Dr. Armstrong thinks that the copaiba deserves to be conspicuously placed amongst the internal medicines, as it exerts a specific influence on the mucous membranes. It has failed with the author in producing so much benefit as he was led to expect from Dr. Armstrong's report. Whenever there is much fever it appears to be increased by this remedy, and it does not always allay the cough, or alter the expectoration. It frequently disagrees with the stomach when given in sufficient doses to benefit the pectoral symptoms, and sometimes a diarrhœa comes on under its use; occasionally it produces all the troublesome effects without relieving the cough. But the balsam certainly seems to exert an influence on the mucous membrane, although, perhaps, not a much greater one than the squills or meadow saffron."

Dr. La Roche has, in one of the numbers of the "North American Journal," given us some valuable cases illustrative of this power; one of Mr. Roberts, a gentleman, twenty-two years of age, is particularly interesting; the symptoms were of the most aggravated character; nocturnal sweats, extreme debility, difficulty of breathing, copious expectoration, were present, and resisted every treatment that could be suggested; these began to disappear after two weeks' administration of large doses of copaiba, and three months were sufficient to restore him to perfect health.

Balsam of copaiba has been employed with some success in dropsy; the cases on record, however, are not numerous; the most remarkable one is that of the celebrated Mutis, which has often been alluded to; whilst practising at Santa Fe, he gave it, commencing by small doses to the extent of a large spoonful morning and evening, to a female labouring under ascites; she drank immediately after a glass of barley-water: this excited the kidneys into extraordinary action, and in the course of forty days she was perfectly cured.

In diseased states of the mucous membranes of the intestinal and urinary passages this is one of the most serviceable medicines we possess; in affections

of the rectum, in which the lining membrane is the principal seat of disorder, we obtain from it more relief than from any thing we possess; hence its use in some states of hæmorrhoids; it does not, however, act where the tumours are the sole cause of the anguish and uneasiness. As long as these remain in a turgid state, and by their mechanical obstruction add to the mischief, you are not to expect to derive any particular advantage, but as soon as these are reduced, and when the relaxation of the internal membrane is a source of mischief, you are to have recourse to it. In ulcerated states it is most valuable—in chronic inflammations, and in that peculiar condition which has occasionally been consequent upon the undue action of very active cathartic remedies, where the mucous lining of the intestine has been discharged, almost in the form of the bowels, in that condition which Dr. Good has called diarrhœa tubularis, this has attended upon large doses of the oil of turpentine to dislodge tape-worm; upon the injudicious employment of doses of gamboge, it leaves the subjacent tissue in a most irritable state, so that any evacuation is attended with a high degree of suffering; for this the balsam is to be given either by the mouth or by injection. Where, from the long existence of hæmorrhoids, the verge of the anus is in a very irritable condition, surrounded by small papular eruptions, which keep up an intolerable itching, where the morbid state is evinced by an inordinate quantity of perspiration, which is sometimes so great as almost to lead to a belief that there is a mucous discharge, the same treatment is to be pursued. You had better first, however, allay the itching, which may be done by a local application of one part of creosote to three parts of the balsam of copaiba, which must, by agitation, be mingled together.

In gonorrhœa, after the inflammatory stage has in a great measure been relieved, you may administer this therapeutic agent, but it ought not to be commenced with until free purging has taken place; there are many practitioners, nevertheless, who consider that it may with safety be given during the inflammatory stage, and with decided success. It has been stated that incipient gonorrhœa has been cured in two or three days by a drachm of the balsam of copaiba, night and morning, and that obstinate gleets have yielded to it in fifty hours. Dr. Dawson, of Sunderland, adopted this mode of treatment on a large scale, and communicated it to Dr. Armstrong, who became its warm supporter. That in many instances this plan of treatment may, without doing any mischief, be followed, I have no doubt whatever; still there are many instances in which very bad effects have resulted from it, such as the swelling of the testicle, high irritation of the bladder, and also acute rheumatism.

I believe that great surgeon, who has been the ornament of the English school for so many years, Sir Astley Cooper, was one of the first who pointed out the existence of what is called gonorrhœal rheumatism, though it is not an unfrequent disease. He met with a case of an American gentleman, who had both the ophthalmia and the rheumatism, which has sometimes since been found to supervene upon gonorrhœa, and it made a strong impression upon his mind, more particularly as he had not found any description of it in any surgical work. He observes that it requires the same remedies that are used in gonorrhœa, either the spirit of turpentine, the balsam of copaiba, or olibanum; those who have since that period watched the nature of these affections, have ascribed them to causes quite independent of the original disease; and amongst those that have been suggested, and with every reason to believe in the soundness of the observation, has been the use of the balsam of copaiba, which has caused that degree of rheumatism which would be called gonorrhœal.

This form of disease has been very well described by Dr. Titley, who, however, ascribes it to the suddenly ceasing the use of cubebs, or copaiba; he observes, "that the pain and swelling are more especially confined to the knees and ankles, though, in some instances, the symptoms are more diffused, the pain is more acute, and the general disturbance of the system more violent; there is often much puffiness and tenderness of the ankles, especially towards evening; the skin is not externally red, and the pain is not much increased on pressure; the pulse is quickened, the stomach becomes disordered, and the appetite declines,

or altogether fails." There is a very good paper on this subject, showing that gonorrhœal rheumatism is copaibal rheumatism, with some cases, from the pen of Mr. Eagle, of the Poultry, which is to be found in one of the volumes of THE LANCET; it contains some very interesting information with very fair and just reasoning. Mr. Maddock has likewise favoured us with the result of his observations through the same channel, and he has seen no one instance of gonorrhœal inflammation, unless copaiba had been antecedently administered. One of the effects of the administration of copaiba has been an eruption of papulæ, and sometimes of pustules in large patches. Mr. Judd has given us instances where, when this remedy had been taken, the stomach has become deranged, and then the skin affected; in one instance the copaiba had been only taken a week for gonorrhœa, when itching, tingling, aud irritation, with pain in the limbs, came on; a very vivid mottled state of skin almost immediately followed the latter symptom, and covered his whole person a capite ad calcem. Mr. Judd has, in his very useful work entitled "A Practical Treatise on Urethritis and Syphilis," which deserves a much higher place in the medical works of the day than many others which have a greater character, exhibited a most interesting plate of the puniceous mottled skin from copaiba, drawn from a case which presented itself to him, and likewise another of the eruption of papulæ; these are well worthy your attentive examination. You must bear in mind that the puniceous eruption from copaiba seldom lasts beyond the ninth day, and that where eruptions of the skin follow upon gonorrhœa, they do not occur much before three weeks have elapsed from the imbibition of the gonorrhœal poison. Although under such circumstances you may lessen the dose of copaiba you need not discontinue it, for it will not aggravate the eruption which will run through its course. Where gonorrhœa has been attempted to be thus cured too early, the synovial membrane of the knee-joint is very apt to become inflamed, and this is often called metastasis; but if you examine into all the circumstances, you will find that the balsam of copaiba has been given before the inflammatory state of the mucous membrane of the urethra has been reduced. In the gleety discharge which follows upon gonorrhœa, nothing is more likely to be serviceable than the copaiba; it is not, however, so good as the diosma crenata, or buchu, in that which is not dependent upon a specific poison, but is the result of debility, where, from some causes, there is a weeping or actual catarrh from the urethra, which is rather consequent upon a long-continued chronic inflammation than from the acute one caused by gonorrhœa. You must remember that John Hunter shows how necessary it is to persevere in its use, and to recur to it even after the shadow of a suspicion of latent mischief has disappeared. When your patient says there is not the slightest discharge, and you allow him to leave off his dose, impress upon his mind that in about ten days he must return to it, or else he may be harassed for months by a relapse, after he has indulged in a good dinner, has rode on horseback, or has even followed any ordinary occupation with greater earnestness than usual. Hunter says, "I have known cases where the gleet has immediately disappeared upon taking the balsam, and recurred upon leaving it off; and I have also seen where that medicine has kept it off for more than a month, and yet it has recurred immediately upon laying it aside, and stopped again as quickly upon having recourse to it." The sweet spirit of nitre, with camphor mixture, determines the copaiba very speedily to the urinary apparatus, and forms one of the most useful modes of giving it for a great length of time; it may be discontinued, and then again had recourse to with good effect.

Dr. Daniel Turner, whose name I have had occasion to mention to you, was one of the early employers of this remedy, which he gave with sugar in the form of paste in gleets with very great success; and this mode of using it is very excellent, for it disguises the excessive nauseousness of the drug. Shortly after it has been taken, the stomach becomes qualmish; in some instances there is excessive nausea with flatulence, occasionally palpitations of the heart have been complained of; the eructation, which is very offensive, shows that this has depended upon momentary pressure upon the diaphragm; the bowels are

not unfrequently much acted upon, whilst the urine acquires a very peculiar odour, such as that which the violet exhales, only much more powerful. Much of the efficacy of this medicine will depend upon its mode of administration and upon its purity; combined with the liquor potassæ it often agrees well with the patient. Dr. Chapman recommends it to be dropped on half a wineglassful of water, to which is to be added, slowly, a few drops of a bitter tincture, by which means the copaiba is collected in a small globule which is easily swallowed, and it does not communicate any disagreeable impression to the palate. It was used amongst the Americans at a very early period as an injection into the urethra for gonorrhœa, and Jacquin was able to bear testimony to the success of this practice; it has been, since that period, frequently thus used with considerable advantage, but always after the inflammation has subsided, many very obstinate gleets have completely yielded to this. On the common mucous discharges from the vagina this agent does not exert any specific effect; they are, for the most part, dependent upon the state of the general health, and though to be restrained by local applications, in many instances demand constitutional treatment; and where copaiba is, in such instances, injudiciously given, it may keep up a high state of irritation, and be productive of much mischief; where these discharges are dependent on irregularity in the habits of life and a want of cleanliness, this is to be avoided; but in the discharge from gonorrhœa it may be employed even in the stage of inflammation with less circumspection than in the male. Although we hear of very large doses, you will find from fifteen to forty drops, two or three times a day, quite enough. Schewdiaur, who had very great experience in disorders of the reproductive system, gave from fifty to one hundred drops morning and evening: a drachm generally acts very quickly upon the bowels. It has been given also in large doses for affections of the kidneys, for gravel, for paralysis; it has been externally applied for the cure of wounds, for the healing of abscesses; and Hoppe states that, where sinuses exist, they are often very speedily healthily filled up if the dressings contain some portion of the balsam. In wounds of the tendons and nerves, where trismus has occurred, its local application has been said to soothe the system and very speedily to remove the spasm; it has likewise been spoken of as an external application to paralysis of different muscles; and a liniment formed of it has been known to stimulate some parts into action that had apparently lost their power. It has been said by Ratier, that the value of copaiba is diminished by any quantity of fluid, and, therefore, attempts have been lately made to give it entirely in the solid form; but this is a great mistake, for the stomach demands much more power to dissolve it than in a fluid form, and dyspepsia very often occurs after a very few doses; sugar is, however, a good assistant to it; or, as Ratier recommends, a teaspoonful of wine, and this is to be taken without giving any drink if possible. Stimulants should generally be avoided whilst this drug is taken, and every thing that can determine much to the kidneys and bladder, which have occasionally been much irritated by it. Blisters should be avoided during its use, for strangury is likely to supervene; its bad effects are best obviated by the free use of camphor, or may be checked by opium or hyoscyamus. —*Lancet*, Sept. 8, 1838.

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20. *Syrup of Ioduret of Iron.*—The ordinary solution of ioduret of iron is so speedily decomposed as to render its administration troublesome from the necessity of frequently renewing it; and the dose is also uncertain. M. Frederking has published in *Buckner's Repertorium fur die Pharm.* (1839), a formula for the preparation of a syrup of this salt which even when exposed to the air remains undecomposed for upwards of three months. This formula is as follows: Take of pure iodine one hundred grains; iron filings fifty grains; distilled water one ounce. Digest these for some time, filter and wash the ferruginous mass with a little distilled water; unite the fluids and add half an ounce of sugar; then evaporate down to one ounce. This syrup united with powdered marsh mallow makes a good pilular mass, or mixed with water, a clear solution. Four parts of this syrup contains one part of ioduret of iron. Hengel has

observed that the syrup becomes brown; but sometime afterwards its clearness is restored without any precipitate of oxide of iron.

SPECIAL PATHOLOGY AND SPECIAL THERAPEUTICS.

21. *Paraplegia Cured by the Use of the Secale Cornutum.*—Our preceding No. p. 205, contains some observations on the efficacy of ergot in paralysis. The following cases, which afford additional evidence to the same effect, are from a late No. of the *Révue Médicale.*

Case 1.—A man, ætat. 72, was admitted into the Hôtel Dieu at Aix, with so little power in his limbs that he could scarcely maintain himself erect. The sensibility too of the limbs was much impaired. A variety of local and general remedies had been tried, but without advantage. M. Arnaud directed him to take an infusion of a scruple of ergot of rye every morning early. After a week's use of it, there was a manifest improvement in the patient's condition; and at the end of the third week—the dose had been increased to half a drachm—he could walk about the ward, and go up and down stairs with the aid merely of a stick.

A sense of pricking and occasional involuntary twitchings of the muscles of the limbs were experienced during the use of the remedy.

Case 2.—A soldier, while on ship-board, fell backwards on a beam of wood with such violence as to stun him; the loins were very severely bruised. By the employment of quietude, leeches to the part, &c. the local symptoms were speedily relieved; but there remained an almost complete loss of power in the lower limbs, so that not only the patient could not support himself on his feet, but he was unable to raise either leg from bed.

An infusion of the ergot was, therefore, ordered to be taken every morning. An amendment had manifested itself at the end of a week or ten days, when the use of the medicine was discontinued by the direction of another physician, who ordered the moxa to be applied on each side of the lumbar vertebræ.

Three months afterwards the state of the patient was not at all improved. The use of the ergot was now resumed, and the dose was gradually increased from 15 to 60 grains. This treatment was persevered in for five or six weeks, at which time the patient was entirely cured of all paralytic weakness.

Case 3.—A man, ætat. 26, had been for two years labouring under disease of the spine, (Pott's disease,) which was ultimately arrested by the use of caustic issues, &c. A great weakness of the lower limbs, however, remained behind, so that it was only with extreme difficulty that he could walk. As the disease of the spine seemed to be quite got the better of, the weakness was attributed to a mere atony of the muscles from the long-continued inaction which had been necessary during the treatment. A fortnight's use of the ergot restored him to the perfect enjoyment of his muscular strength.

Case 4.—In this case a degree of paraplegia had remained after a severe bruise of the loins. When all the inflammatory symptoms were completely removed, the patient commmenced the use of the ergot; in the course of a fortnight the paralytic weakness had quite ceased.

Remarks.—The directly stimulating effects of the ergot on the uterus, bladder, and lower extremities, cannot be questioned by any practical man in the present day. It has been used, with decided advantage, not only in lingering labours arising from imperfect contractions of the uterus, but also in other cases where this viscus is atonic, as in many cases of amennorrhœa, of passive uterine hemorrhage, and of abortion; likewise in certain retentions and in incontinence of urine, connected with defective contractility of the bladder; and more recently in certain forms of paraplegia, and of muscular debility of the lower limbs.

Its *modus operandi* is probably by stimulating the lower portion of the spinal column; its effect on the pelvic viscera and lower extremities being thus, as it were, secondary."

22. *Case of Acute Anasarca and Convulsions after Scarlatina Relieved by a Profuse Bleeding.*—Dr. Marshall Hall relates, in the *Lancet*, the following case, which he states to be one of the most deeply interesting it has ever been his lot to treat.

"A year and a half ago Mr. Duffin took me to Highgate; we met Mr. Snow. The patient was a boy ætat. 12. Sixteen days before he had gone through scarlatina in its very mildest form; he had scarcely been confined to his bed, and had not suffered from the *nimia medici diligentia;* he had appeared quite well.

"On this Sunday morning he was seized with swelling of the face, which came on and increased equally suddenly and rapidly. With this symptom there was the appearance of a sudden and serious collapse, and soon afterwards convulsions followed by coma.

"When I first saw my patient there were convulsions followed by deep coma; wine and brandy on the table indicated sufficiently the previous state of the case. I felt persuaded, in spite of the appearances, that the only hope was afforded by relieving the vascular system within the head, and yet that the measure was not unattended with danger. This view was freely explained to the boy's father, who very sensibly said he confided his son's life to the hands of his medical advisers.

"We placed the patient upright, and Mr. Duffin opened the jugular vein. I kept my finger on the pulse while we allowed *twenty ounces* of blood to flow! The convulsions ceased, and the coma diminished, but did not disappear. We then ventured to open a vein in the arm, and abstracted seven more ounces of blood!

"In less than an hour the little patient knew his parents. We prescribed calomel and purgative medicine; a cold lotion to the head, and fomentations to the feet; afterwards leeches were applied; but the blood-letting was *the* remedy to which the amendment was obviously due. The little boy recovered forthwith, and what is important, without the least symptom of the morbid effects of loss of blood.

"I must remark, 1st, that the acute anasarca and convulsions may, and frequently do, follow the mildest cases of scarlatina, perhaps because, after *such* cases, less precaution is usually taken to clear the bowels; 2d, that in all cases of acute anasarca there is the danger of an affection of the head, arachnitis, coma, or convulsion; and 3d, that in such cases the remedy is blood-letting—*blood-letting until relief and security are obtained.*

"I have thought it right to send this case for publication, in order that I might insist upon the importance and necessity of an energetic use of this powerful remedy in such fearful circumstances."

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23. *Fetid Perspiration in the Arm-pit.*—Dr. Guastamacchia, relates in a recent No. of one of the Italian medical journals, the case of a woman who had a profuse and fetid exhalation from her arm-pits, and who was cured of this disgusting infirmity by the decoction of the artichoke, (*Carduus hortensis.*) The patient took the remedy for eight consecutive days, in the dose of half a bottle daily,* in two doses, with half an hour interval. The secretion of urine became copious, it acquired a fetid odour, and the patient was entirely relieved.—*Révue Médicale*, Jan., 1839, from *Il Filiatre Sebezio*, 1838.

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24. *On the employment of the Compound Mercurial Plaster, for the Prevention of Pitting in Small-pox*, by N. Aug. Nonat.—The reputed power of the compound mercurial plaster, (Emplastrum de Vigo cum mercurio,) in preventing the formation of pitts or cicatrices from the variolous eruption, induced M. Nonat to make trial of it in a number of small-pox cases, and the results were all highly satisfactory. Many experiments have been of late years made in France with this plaster. MM. Serres and Gariel, however, appear to have taken the lead on

* The size of the bottle and the strength of the decoction are not stated in the journal from which we derive this information.

these investigations, and the results of their experience were published in the *Archives Générales*, vol. viii. p. 468, in the year 1835.

The conclusion to which these investigators arrived was this; that in all the cases in which the compound mercurial plaster was applied to the surface of the skin when covered with the variolous eruption, it produced a kind of abortive action in the pustules, by which matter was prevented from forming, and consequently no scar or pit was left. It did not appear that the prevention of the formation of matter in the pustule or its absorption if present, was followed in any one case by disagreeable symptoms; on the contrary, the disease appeared to be rendered milder by the diminution of the number of pustules. M. Gariel goes so far as to say, that, if by the application of the plaster to the whole surface of the body, we could prevent the suppuration of all the pustules, he has no doubt the disease would be reduced to its most simple condition. His experiments, however, only show the advantage of this treatment when applied to the face.

In the first case related by M. Nonat, he applied, as a means of comparison, on one thigh, the common diachylon plaster, on the other, the compound mercurial plaster, which last was also applied to the face. On the eleventh day of the disease both plasters were removed, when it was found that no change had been produced on the pustules by the diachylon plaster, as they had presented precisely the same appearance as those on the parts of the body which had not been interfered with; whilst those under the mercurial plaster were converted into solid tubercles, the skin being of a natural colour, and neither swollen nor painful. From this date, the pustules modified by the mercurial plaster, became the seat of a furfuraceous desquamation, under which they gradually diminished, and left not the slightest trace of a cicatrix. The eruption in this case was confluent.

The next case is equally interesting. The patient was a woman, 36 years of age, and the pustules were confluent on the face, and partly so on the body. On the first day of the pustular eruption, the compound mercurial plaster was applied to the face; on the second day, to the right thigh; on the third day, to the left fore-arm; and on the fifth day, to the right fore-arm; and on the sixth day of the eruption, to the back of the hands.

On the eighth day of the eruption the mercurial plaster was removed from the face, and the parts which it had covered were found to be neither swollen nor painful, the pustules were all converted into minute granules or tubercles, varying in size from the minutest point, which scarcely raised the cuticle, to nearly the size of a hemp-seed. No fluid of any kind existed in the tubercle which had been left; the base alone of each was slightly injected and reddened. On the nose and lips, with which the mercurial plaster had not been in immediate contact, the pustules had gone on to suppuration; the pustules over the rest of the body being only as yet filled with a transparent serous fluid.

On the tenth day, the plasters, which had been applied on the second and third days, were removed, and the pustules were found changed in the same manner as those of the face had been.

The plasters which had been applied on the fifth, sixth and seventh days of the eruption, that is, after it had advanced to the state of vesicles or pustules, seemed to have little or no effect in preventing the suppurating process, only the pustules advanced rather more rapidly than those on the rest of the body.

From this it appears, that if the mercurial plaster be applied on the first, second or third days of the eruption, it will cause their disappearance without suppuration; whilst if applied later in the disease, though it may hasten the process, it does not put a stop to it.

M. Nonat relates many similar cases which it seems unnecessary to specify, all tending to prove the *abortive power*, if it might be so termed, of the compound mercurial plaster. It is to be hoped that practitioners in this country will be induced to give a fair trial to this simple means of preventing those unseemly scars which disfigure the countenances of those who have been afflicted with

small-pox.—*Edinburg Méd. and Surg. Journal*, from *Gaz. Med. de Paris*, July 27, 1839.

25. *On the Employment of Gold-leaf for the Prevention of Pitting in Small-pox.* Baron Larrey communicated to the Academy an interesting notice of a practice which was prevalent amongst the Egyptians and Arabs, by which they prevented the unseemly scars produced on the exposed parts of the body by the suppurating of the small-pox pustules. The practice consisted in covering the exposed parts of the body, as the face, hands and feet, with gold leaf, as soon as the eruption made its appearance.

M. Legrand bears testimony to the efficacy of the practice, having tried it in one case, which he relates. The patient was a beautiful English girl, who had a copious eruption of confluent small-pox. On the first day of the eruption the whole of the face was covered with the gold leaves, which were made to adhere by means of gum-water. The application was renewed morning and evening so long as the suppurative fever continued; and when the cure was completed, not a pit or scar was left on the face where the gold leaf had been applied. The hands, and the rest of the body which had not been thus protected, were deeply marked with the scars of the pustules.

Baron Larrey says, that he has found nearly the same beneficial results to follow from the repeated anointing of the face of the person labouring under small-pox with almond oil; a practice which recommends itself from its cheapness and the facility of its application.—*Ibid.*, from *Compte Rendu*, July 1 and 8, 1839.

26. *Creosote in Deafness.*—Mr. Curtis says that he has employed creosote with advantage in cases of deafness, resulting from a deficiency of secretion of cerumen. It is necessary first to cleanse the meatus auditorius externus. For this purpose, Mr. C. generally employs a preparation consisting of half an ounce of ox-gall mixed with a drachm of tincture of castor or tincture of musk, with which a piece of cotton is moistened, and inserted into the meatus at night; to soften the hardened cerumen, the ear being syringed in the morning with warm water, to which one ounce of soap liniment and a little eau de cologne have been added. Mr. C. says he occasionally substitutes the solution of potash of the Pharmacopœia with oil of almonds, for the preparation of ox-gall and castor, with equal advantage in dissolving the cerumen.

When the meatus is well cleansed, he uses the following: Take of creosote ʒj; oil of almonds ʒiv. Mix. A little to be inserted into the meatus night and morning, with a camel-hair brush.—*Lancet*, Nov. 24, 1838.

27. *Contribution to the Pathology of the Diseases of the Lungs.—Tubercular Excavation, without cough or expectoration, or any apparent symptoms of illness, presenting in an active, muscular young man, and suddenly proving fatal by rupture of a large blood-vessel.* By D. Maclachlan, M. D., Assistant Surgeon 79th Regiment.—Accident frequently discloses extensive organic changes, the previous existence of which were wholly unsuspected: nor does any one organ, however important in the animal economy, appear to be exempt from latent disease. The brain, the heart, and stomach, have each been found altered in structure without the outward, reputed symptoms of derangement of function; and we have an authenticated case on record, of a soldier performing his duties up to the day of his death, with the whole of the right lung converted into one entire abscess. Such remarkable exceptions as these are seldom amenable to art; they advance in secret, and, if in practice, new and unexpected phenomena suddenly rouse our suspicions, and bring them under our cognizance, it is but too often not until they are beyond the control of medicine.

The following case is a good illustration of one of the most frequent lesions of this description—latent tubercular disease of the lung. Arriving at the stage of softening and excavation, without cough or expectoration, and suddenly terminating fatally by hemorrhage, gives it additional interest. We naturally re-

mark, that, had attention been attracted to the chest, had there been previous cough, difficulty of breathing, or any symptom referable to the state of the lungs, an experienced auscultator would no doubt have detected during life what was only discovered by examination after death; and, as rest and quiet would probably have been enjoined, there is reason to suppose life might have been protracted, and the fatal event deferred.

Case.—John Laidlaw, a private in the 79th Regiment, ætat. 22, an active, muscular, well-formed young man, with a capacious and well-proportioned chest, was suddenly seized, apparently without previous ailment, while at light infantry drill in the barrack square, at eleven o'clock on the morning of the 18th January last, with "vomiting" of blood. I saw him five minutes after the attack. Scarlet-coloured blood was then gushing out of the mouth and nostrils. He was in a stooping posture, in the greatest distress, supported by one of his comrades, and the gurgling in the trachea and suffocative breathing gave direct evidence that a large vessel had given way into some part of the respiratory organs. The man was carried to the hospital, a few yards off, and a vein was immediately opened in each arm, while at the same time dry cupping was extensively practised over the chest. The left external jugular vein was also opened. Six or eight ounces of blood were obtained from the orifices, but without the least relief to the breathing or abatement of the profuse hemorrhage from the mouth. He almost immediately became convulsed and insensible, and died in five or six minutes, eleven or twelve hours from the period of seizure.

The body was examined twenty-four hours after death. Percussion elicited a clear sound over the chest. The epigastrium was considerably distended. On removing the sternum and ribs, the lungs presented a perfectly natural aspect. Firm adhesions of both pleuræ existed on both sides. The large vessels with their immediate branches were now carefully searched. This examination being fruitless, and it being observed that pressure on the left lung forced frothy bloody serum out of the mouth, the lung was removed from the body, when a deep puckered indentation presented itself, in the summit of the upper lobe, immediately below and about the centre of the clavicle. This puckering pointed out a collection of small, gray, semitransparent tubercles, altogether forming an induration larger than a pigeon's egg, in the centre of which two caverns, filled with dark coagula, were discovered, communicating freely with each, the one capable of holding a nutmeg, the other about half this size. There were several smaller vomicæ in the mass. The walls of the large excavations had a rough, broken down aspect, as if recently lacerated. There was no lining membrane, and no appearance of purulent matter. The openings of the bronchial tubes in these cavities, four or five in number, were filled with clotted blood, and the ruptured vessel presented a gaping orifice easily admitting a large probe, and situated near the centre of the larger excavation.

The stomach contained upwards of two pints of dark semifluid blood, occasioning the distension perceived in the epigastrium. All the other viscera appeared healthy, and the remainder of both lungs was free from tubercles.

The portion of lung was exhibited a few hours after its removal to some of the members of the Pathological Society of Dublin. Among these I may mention Drs. Graves, Stokes, and Corrigan; and to Mr. Smith, one of the Secretaries, I am indebted for a beautiful preparation of the specimen.

Before concluding the history of the case, it may be well to remark, that the man had been under my care, two months before death, with a non-syphilitic bubo in the groin. He was in good general health, and resumed his duties immediately after he was discharged from the hospital. He had been fourteen months in the regiment, and had never been on the sick list more than a day or two at a time, and then always with the most trivial complaints.

There are several cases on record of tuberculous excavation without cough or expectoration. One has been related by Andral, (Clin. Med. Malad. de Poitr,) which I cannot forbear quoting. A young man, 18 years of age, came under his observation, with well-marked symptoms of chronic peritonitis and enteritis.

On examination after death, the summit of the right lung was found hollowed out into a cavity capable of holding a small apple, the walls of which were lined with concrete purulent matter: this cavity was empty. Beside it there existed three or four smaller cavities, communicating with each other, equally empty. The rest of the parenchyma of the lung contained a great many crude tubercles. The bronchial membrane was pale, accounting, Andral supposes, along with the empty state of the cavities, for the absence of cough and expectoration.

The rarity of fatal hemorrhage from rupture or perforation of a vessel in tuberculous excavation, has been remarked by almost every writer on the subject of tubercular phthisis, and though, on the whole, not uncommon, it is unquestionably, according to Latham, (Clin. Lectures,) one of the least frequent causes of hæmoptysis. Nature in these cases takes the greatest pains to prevent it, and, as observed by Dr. Clark, (Tuber. Phthisis, Cyc. of Pr. Med.,) the rarity of this accident may be estimated by the fact, that the bands which traverse the caverns were found by Louis to contain pervious blood-vessels in only five out of 123 subjects whom he examined. Andral, amid his extensive opportunities, has only once been able to find the orifice of the ruptured vessel from which the blood had escaped in hæmoptysis furnished by tuberculous excavation. This vessel was contained in a band which traversed the cavity, and which band had been torn. But in all the other cases he found it always impossible to trace the existence of the hemorrhage to the rupture of large blood-vessels.

In the case of Laidlaw, the vessel was larger than the temporal artery; it was distended with a firm clot, and was at first taken for one of the bronchial tubes opening upon the cavern, the whole of which were similarly plugged up. The interesting points of this case appear then to be:—

1. The existence of tuberculous excavations, without cough or expectoration, in a muscular subject apparently in the enjoyment of perfect health.

2. Under these circumstances suddenly fatal hemorrhage.

3. The discovery of the ruptured vessel, and its size exceeding that of the temporal artery.—*Edinburgh Medical and Surgical Journal*, July, 1839.

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28. *Case of Croup in a Woman thirty years of age, cured by the Nitrate of Silver.*—The subject of this case was a woman, ætat. 30. The disease commenced on the 30th September, with slight uneasiness of the throat, which became worse the following day. On the 4th October the pain in the throat was considerable, and the left tonsil was slightly swollen, and in one portion presented a small yellowish point. She had no cough or fever, and the sound of the voice was not changed.

On the 6th, the loss of voice was complete; but guttural whistling sounds were heard. The left tonsil presented on its inferior half a false yellowish coloured membrane, which seemed to extend towards the opening of the larynx. This membrane was with difficulty detached with the handle of a spoon, showing the portion from which it was detached to be red and bloody. The pain in the throat was very great, but there was not much fever. M. Bretonneau being consulted, advised the parts to be touched with a concentrated solution of the nitrate of silver. Four drachms of the nitrate of silver were, therefore, dissolved in twelve drachms of distilled water, and the inflamed parts were touched three times a day with it. After each application of the caustic, the patient complained of a sensation of burning heat in the throat; and, after repeated attempts at coughing, brought up some fragments of tough yellowish membranes.

On the 7th, the pulse was somewhat increased in frequency; the same whistling sounds were still emitted from the throat, and she complained of sharp pain chiefly in the left side of it. There was an abundant discharge from the pharynx of thick and coagulated mucous fluid, resembling false membranes, which had formed on the tonsil and anterior pillar of the pharynx. The expectoration was mucous, and mixed with shreds of false membrane. The solution of the nitrate was thrice applied during the day.

On the 8th, the voice was less stifled, and the whistling sounds were some-

what diminished. A considerable quantity of false membrane was brought up by the cough. The caustic solution was twice applied.

On the 9th, the same voice was more natural and scarcely attended with any whistling sounds, and the back part of the throat and epiglottis was in part deprived of its covering of false membrane. Considerable quantities, however, of false membrane were coughed up during the night. The caustic solution was omitted this day.

On the 10th, it was found that many portions of false membrane had been coughed up since the day before—many of them blackened with the nitrate of silver. The caustic was applied this day, and again, for the last time, on the 11th, from which period convalescence rapidly advanced.

The following is M. Bretonneau's method of applying the caustic. A fine piece of sponge, of a pyriform shape and about the size of the thumb, is cleft crucially at its smaller extremity, in order that it be attached to the bent extremity of a piece of whalebone, which is to serve the purpose of a handle to it. The patient is seated on a chair with his face to the light, and the head is held back and supported by an assistant. The sponge is then dipped in the caustic solution, and the fluid is afterwards expressed so as merely to leave the sponge moistened with it. The tongue is then held down by means of a spoon or spatula in the left hand, and the sponge freely applied over all the inflamed parts of the pharynx. To apply the caustic solution to the larynx, the sponge is carried beyond the glottis, and by means of a sudden pressure on the base of the tongue a few drops are expelled from the sponge, which find their way down into the larynx. This is repeated again and again, varying the point on which the pressure is made, so as to insure the caustic solution reaching all the affected parts. The caustic is applied three times a day till the inflammatory action begins to abate, when it is less frequently repeated, and the solution employed ought to be weaker.—*Gazette Médicale de Paris*, June 29, 1839.

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29. *Treatment of Stomatitis, or Gangrenous Inflammation of the Mouth.*—This disease usually commences in the gums about the roots of the teeth, and M. Taupin recommends that we should endeavour to confine it there, by means of detersive and gently caustic applications—and of these, the dry chloruret of lime is the best—if we are called in to the case sufficiently early. It is useful to interpose some substance, such as a thin plate of ivory, cork, or metal, between the affected gums and the opposed cheek, in order to preserve as much as possible the latter from the contact of the septic discharge—and the patient should be made to spit out the contents of the mouth very frequently. If he is too young to use a gargle, we must have recourse to the employment of injections, by means of a syringe or bag and pipe—these should be used every hour. The lips, and more particularly their commissures, should, at the same time, be smeared with some unctuous substance to protect them from excoriation.

If the disease has already extended to the cheeks, tongue and palate, we cannot do better than at once apply the dry chloruret of lime to the diseased surfaces; this application should be repeated every two hours.

The mode of using it is as follows:—

With the moistened fore-finger take up some well pulverised chloruret, and rub all the affected parts freely with it; then let the patient wash out the mouth by gargling, or, if he is too young, we must effect this by squirting in some fluid. In the course of two hours or so, the operation should be repeated, and the patient should be encouraged to allow the dry chloruret to remain on the parts as long as he possibly can. As this salt is very disagreeable, we cannot expect this in young children. These frictions sometimes occasion slight hemorrhage; but this is rather useful than otherwise, as it tends to diminish the engorgement around the diseased parts.

The chloruret acts as a gentle caustic, and as an antiseptic or disinfecting remedy, causing a new irritation, which supplants and removes the diseased action.

By following out this course of treatment, M. Taupin has repeatedly seen

gangrenous stomatitis, which had lasted for several months, and had resisted every other mode of management, cured in from five to ten days.

In private practice it very rarely fails; and in public or hospital practice it would certainly be as successful, if it was pursued with due attention and care.

M. Taupin has never seen any accident result from its employment. If any of the chloruret should be swallowed, it almost immediately induces vomiting, and is thus rejected. The only disadvantage attending its use is that the teeth are blackened, and frequently remain so for several weeks.

If the stomatitis be accompanied with much swelling of the cheek and lips, it will be found useful to apply two or three leeches at the angle of the jaw most affected, and smear some mercurial ointment around the part.

Whenever there appears to be no removal of the eschars, the healing of the ulcers on the gums and cheeks will be much promoted by touching their surfaces occasionally with nitrate of silver.

As long as the disease retains its buffy (*counneuse*) or ulcerated form, the local means now mentioned, will, in almost every case, be found adequate for the cure; but when it becomes carbuncular and gangrenous (*charbonneuse*) it will be necessary to resort to the application of more powerful caustics. The pure muriatic acid is one of the best.

It is to be remembered that in some bad cases, where the gangrenous parts are of considerable thickness, the mere application of the acid to the mortified surface is not sufficient; we must previously detach as much of the eschars as possible, by means of scissors and forceps, and then apply the acid to the subjacent surfaces. In this way only shall we succeed in arresting the gangrenous action. It is always necessary to guard the tongue, teeth and lips from the contact of the acid; and, with due care, this may always be done.

If the gangrenous stomatitis has commenced in the central part of the cheek, we should in the first instance use leeches, the mercurial unction, and scarification of the mucous texture; and, whenever the eschar appears, the muriatic acid should be at once applied. When the eschars begin to fall off, injections of camphorated cinchona or of solution of chloride of lime should be applied frequently, or the dry chloride may be used as already explained. In the worst cases, the subjacent bone becomes carious and necrosed; but the same mode of treatment is still to be continued.

We have not yet spoken of the internal treatment that is to be used at the same time. The bowels should be kept gently open, but not much purged; and bark, wine, beef-tea, &c., should be administered freely. In some unfavourable cases, the disease of the mouth is complicated with symptoms of pneumonia or enteritis. Such cases are almost always fatal; bleeding is out of the question, and all that can be safely done, is to administer opium and antimony in repeated doses.

Before closing these remarks, we shall very briefly allude to a few local applications, which, though not so decidedly and uniformly efficacious as the chloride of lime, succeed in a good many cases. Alum is sometimes, but rarely, used in any of the hospitals of Paris. The muriatic acid, mixed with honey, is often of marked utility; so also is the pulp of the lemon, which will frequently succeed very well, when the disease is limited to the gums.—*Med. Chirurg. Rev.* from *Jour. des Connaiss. Med. Chir.*

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30. *On Chlorosis accompanied by Menorrhagia.* By M. Trousseau.—The coincidence of diminished or suppressed menses with chlorosis is so common, that the fact is frequently overlooked that a chlorotic state may exist in conjunction with menorrhagia; in both we have extreme paleness, discoloration of the blood, a tendency to dilatation of the heart, *bruit de soufflet* in the principal arteries, and neuralgia in different regions; when the menstrual flow is deficient, these symptoms are said to arise from chlorosis, when it is superabundant, from anemia. We frequently find that chlorosis may be traced in the first instance to a copious nose-bleeding or to any other unusual loss of blood, arising accidentally or produced therapeutically; so that a transitory anemia will give rise to perma-

nent discolouration and increased liquidity of the blood. This altered state of the circulating fluid is itself sufficient to give rise to hemorrhage, which, thus occurring alternately as cause and effect, does not allow the patient to escape from its evil consequences. This form of chlorosis is, however, much less frequent than that which is attended by amenorrhœa; it forms only one-fourth of the cases occurring in adults, and perhaps one-twelfth in those of young girls. In twelve cases collected by M. Trousseau, there was no serious lesion of the uterus. It would appear at first view that the treatment adopted for amenorrhœal chlorosis would not be suitable for the menorrhagic form; thus, iron, which is given with so much success to restore the menstrual secretion, would hardly appear appropriate when that secretion is in excess: but is not the effect of iron on chlorotic patients rather tonic than emmenagogue? We generally find the health partially re-established before the menses return; the complexion regains its natural tint, the depraved appetite, the pain at stomach, the palpitation of the heart cease, and the *bruit de soufflet* in the arteries is lost, so that the patient frequently recovers the appearance of health before the menses reappear. Presently this secretion is re-established, in consequence of the general return of the system to a healthy state. Iron then is only emmenagogue because it is tonic or reconstituent. Re-established health is not owing to the returning menses, but the contrary. On this view we shall have no difficulty in conceiving that preparations of iron will be of the greatest utility in menorrhagic chlorosis, in which it will operate both as tonic and hemostatic. Giving freely, the preparations of iron between two menstrual periods, we shall find the blood rapidly regain its lost constituents of colouring matter and fibrine, and the secretion will be much less abundant but more coloured. If more powerful anti-hemorrhagic means are required, the ergot of rye will bc very useful. Uterine hemorrhages are generally more violent in the night than during the day, and they occur with the greatest violence about four or five o'clock A. M. Without pretending to account for this singularity, we shall find it highly useful to give a dose of *recently-powdered* ergot (gr. xv. to ℈j.) in the evening, and again about four in the morning. In many cases, the more simple and agreeable administration of acids will be sufficient; of these, the best is the citric, given in its natural form of lemon-juice. If these means are necessary, the chalybeate must be suspended during the menstruation, and afterwards continued whilst any symptoms of chlorosis remain.—*B.* and *F. Med. Rev.* from *Journ. des Connaissances Med. Chirurg.* Dec. 1838.

SURGERY.

31. *On Resection of the Lower Jaw.* By M. Wœnker.—Resection of the lower jaw is made either in the continuity or contiguity of the bone, and ordinarily the half of the maxilla is removed. From 1810 to 1830, it was performed sixty-one times in its continuity, and, from 1793 to 1831, eighteen times in its contiguity. In the sixty-one operations in its continuity, forty-one have proved successful, eleven have terminated fatally, and in the remaining nine the result is not stated. In the eighteen operations in its contiguity, eleven were cured and five died. The deaths of two of these is attributable to the ligature of the carotid artery, that of a third which occurred on the thirtieth day to epilepsy, and a fourth died on the thirteenth day of pleura-pneumonia.

Since the year 1831, eighteen operations on the lower jaw have been performed, of which it will be seen that two only terminated unsuccessfully.

1. In 1831, Schindler, of Grieffenberg, removed from a woman, ætat. 29, the half of the lower jaw for an osteo-sarcoma, which had commenced in one of the alveolar processes. The carotid artery was not tied. The cure was perfect at the end of six weeks.—*Graefe and Walther's Journal*, 1832.

2. Bierkowsky, of Varsovia, performed the same operation for caries of the jaw. The cure was perfect on the forty-ninth day.—*Ibid.*

3. Brett operated with success on a patient, ætat. 27, labouring under an affection of the alveoli.—*Med. and Phys. Trans. of Calcutta*, 1831, vol. 5.

4. Hetting removed the half of the lower and a portion of the upper jaw in a scrofulous woman, ætat. 23, affected with medullary cancer of the bones, soft palate and a portion of the cheek. Despite the large extent of the wound, the cure was complete at the end of seven weeks.—*Prov. Med. and Phys. Trans.* 1833, vol. 1.

5. Martin, surgeon of the Hotel Dieu of Marseilles, performed a resection of the lower jaw.—*Gaz. Méd. de Paris*, 1833, p. 688.

6. Goyrand, surgeon of the Hotel Dieu of Aix, removed a portion of the lower jaw for cancer which had affected primitively the soft parts.—*Ibid.*

7. Gerdy removed, in 1833, a portion of the jaw in a man, ætat. 60, affected with cancer, which had commenced in the lip. The patient died of erysipelas. —*Archives Gén.* Septembre, 1835.

8. Gerdy performed the same operation, in 1834, on another patient, ætat. 60, and greatly debilitated, for a cancerous tumour of the alveolar edge of the volume of a walnut. He died on the ninth day of exhaustion.—*Ibid.*

9. Fricke removed from a man, ætat. 60, the tongue and two-thirds of the lower jaw for cancer affecting these parts. Thirty-seven points of suture were made use of to bring the parts together after the operation. A perfect cure followed.—*Zeitschrift für die gesammte Medicin*, 1833.

10. Regnoli, of Pisa, removed by this operation from a sailor, ætat. 48, a fungous tumour of the periosteum, which equalled in size the head of an infant. Perfect success.

11. In 1833, Chelius operated on a woman, ætat. 32, for an osteo-sarcoma, which, sixteen years previously, had necessitated the removal of a portion of the bone.—*Medicinische Annalen von Heidelburg*, 1836.

12. Frank de Casan removed with success a portion of the jaw from a Tartar, ætat. 14.—*Graefe and Walther's Journal*, 1836.

13. Beck disarticulated the lower jaw of a patient affected with caries and necrosis of this bone and extensive ulcerations of the soft parts.—*Communicated by Beck.*

14. Beck in another case removed with success a part of the jaw and coronoid process.—*Ibid.*

15. Beck in a third instance successfully removed the angle of the jaw.—*Ibid.*

16. Chelius has performed the resection of a half of the jaw from an osteo-sarcoma.

17. Pelikan, of Wilna, has successfully performed the partial resection of the lower jaw.—*Graefe and Walther's Joarnal*, 1836.

18. Jagielski has removed the right half of the bone in a woman, ætat. 44, affected with an osteo-sarcoma of the volume of the two fists.

19. Lastly, the following case observed in the service of Prof. Schwœrer will make known a ninety-ninth case of partial resection of the lower jaw.

Case.—Winkler, ætat. 27, entered the hospital May 24th, 1836, on account of a large cancerous tumour extending from the canine tooth of the right side of the lower jaw to the coronoid apophysis. His general health was bad, he was greatly emaciated and labouring under constant fever. Despite these unfavourable circumstances, it was judged proper to attempt an operation which alone offered any prospect of relief. The patient being seated, the soft parts were divided from the temporo-maxillary articulation to the angle of the jaw, and then by a second incision running along the inferior edge of the maxilla from this point to the chin; a third incision half an inch within the commissure of the lips was directed perpendicular upon the second. The rectangular flap thus formed was dissected off from the bone, and the inferior flap was likewise separated from the jaw, as well as the lower lip to the symphysis. The bone was then sawn through, and the fragment carefully drawn forwards and outwards, in order to separate it from all the internal soft parts as high as the articulation. Arrived at this point, it was drawn still more upwards and outwards in order to

avoid wounding the temporal and external carotid arteries, and the operation was terminated by dividing the articulation with a blunt pointed bistoury. Several arteries were divided, some of which were greatly enlarged, but, by securing each of the vessels as divided, the previous ligature of the carotid, which some authors think necessary, was avoided. The patient being placed in bed, the wound was covered with compresses soaked in ice water. At the end of six hours, the flaps were united by means of ten or twelve points of the interrupted suture. By the tenth day, the wound had united with the exception of a point at which the ligatures passed out. The cure was perfect by the fifth week, and the patient left the hospital in a satisfactory state. The face was scarcely altered, the cheek presenting a linear cicatrix and being but in a slight degree more flabby than that of the opposite side. Mastication and deglutition were easily performed.

This observation, adds M. Wœnker, as the ninety-eighth previously referred to, shows that partial resection of the lower jaw is not in itself an operation extremely serious, and to which a resort is only allowable when death is imminent. It furnishes also some useful data relative to the operative procedure.

Some surgeons recommend that, in resection of the jaw, the patient should be placed in the horizontal position: we think, on the contrary, that an upright position is preferable, as it leaves the operator more master of his motions, and prevents suffocation, cough or the efforts at vomiting, which is caused by the entrance of blood into the trachea or pharynx.

Sometimes after the section of the muscles of the tongue, this organ is drawn back forcibly, and produces suffocation. In cases of this kind Lallemand was obliged to perform laryngotomy, and Delpech to draw the tongue forwards with a hook. This accident may always be avoided by flexing the head forwards, since, as Chelius remarks, the retraction of the tongue is determined by the tension of the sterno-cleido-mastoid muscle. In the second point of view, it is then also preferable to place the patient in a sitting position.

Gerdy, Syme, and some others, think it best, in order to prevent injury to the soft parts, avoid pain, and shorten the duration of the operation, to divide the bone with the cutting pliers; we, however, think with Dupuytren, that the saw when properly handled is always preferable.—*Archives Gén.* for July, 1839, from the *Med. Annal. von Heidelberg*, for 1838.

[The translator of this paper in the Archives Générales in a note says, "The assertion of the author that but eighteen cases of this operation have been performed since 1831, is much too absolute. Several operations are no doubt unknown to him. We ourselves have seen two partial resections of the jaw successfully made by M. Jobert, which are not indicated in his enumeration." We may add that, in addition to the cases here referred to, several others which are not noticed, and which have been performed since 1831 on the continent of Europe, as well as in Great Britain and this country, might be easily added to it. The resumé of M. Wœnker, however, perhaps includes a sufficient number of cases of resection of the lower jaw to allow of a practical appreciation of the immediate dangers of the operation, and, in that view, will prove interesting to the surgeon.]

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32. *On the Treatment of Fractures by the Immovable Apparatus.*—Our readers are already aware that in some parts of Europe, more particularly in France and Belgium, the treatment of fractures by the immovable apparatus has, of late, been revived and extensively introduced into practice. The simplicity of the apparatus, the saving of labour to the surgeon, and its unqualified approbation and adoption by so justly high an authority as that of M. Velpeau, added perhaps to the charm of novelty, have all led to its extensive trial.

The manifold objections to, and dangers of the apparatus were overlooked, and we are but now, after a considerable lapse of time, beginning to hear of the ill success following this mode of treatment. If fractures can be any where well treated by the immovable apparatus, assuredly we should look for them in the hospitals of Paris, where the patients are daily visited by the surgeons who

apply it, and yet we have high authority (M. Malgaigne) for stating, that "the cases of want of success are not rare, and that there is not a single service in Paris in which they cannot be seen."*

The following instances, treated by the immovable apparatus, which we have condensed from the late French journals, are well calculated to show the defects and dangers of this mode of practice when applied to recent fractures. It is true that no method of treatment is at all times successful, much depending upon the care and the skill with which the apparatus employed may be applied, as well as upon the subsequent attention given to the case, but nevertheless we regard that by the immovable apparatus as much more likely to occasion unpleasant results than any other of the methods ordinarily employed in the treatment of this class of injuries.

Case 1. A lady, ætat. 50, of good constitution, received a fracture of the lower extremity of the radius by a fall upon the palm of the hand on the 12th of February. An immovable starched apparatus, with two splints extending beyond the ends of the fingers, was applied, each finger being enveloped with a small roller. Acute pain and fever followed, and on the 8th day delirium. On the 14th of March Dr. Thierry was called to see her; and, perceiving a gangrenous odour from the hand, had MM. Ribes and Berard called in consultation, in whose presence the apparatus was removed. The whole hand was found swollen, and the four fingers were completely gangrenous. The fingers were amputated at the metacarpal articulations, and the flaps brought together with adhesive plaster. On the 24th of March, eighteen days after the operation, the stump was completely healed. The usual apparatus for fractures of the fore-arm was now applied for fifteen days moderately tight, with the view of staightening in some degree the inferior extremity of the radius which projected considerably inwards.—*L'Expérience for* 1838.

Case 2. M. G., ætat. 40, received a compound comminuted fracture of both bones of the leg at their middle part, on the 4th of January, by the wheel of a wagon passing over the limb. He was immediately carried to a maison de santé, where the fracture was reduced, and the ordinary apparatus for fractures of the leg applied. Abscesses followed about the seat of injury and were opened. By the 20th of March the wounds were in a good state, and cicatrising, a small portion of bone having exfoliated, and the union was beginning to be solid. At this time the immovable starched bandage was applied, an opening being left in the apparatus opposite the suppurating point, after which the patient was carefully conveyed once or twice to the garden.

On the 31st of March he left the maison de santé, and, after causing the apparatus to be removed, attempted to walk with crutches; the callus not being sufficiently firm to sustain him, he fell and again fractured the part, the tibia projecting through the wound. M. Thierry was immediately called, and found the leg in a deplorable state. Independently of the protrusion of the bone, large collections of matter existed at the upper part of the leg as well as upon its outer side. The fracture was reduced and dressed with the ordinary apparatus, and the abscesses opened. After a long treatment the patient was cured.—*Ibid.*

Case 3. C———, ætat. 13, had his leg fractured by the wheel of a carriage passing over it. A bandage of strips and three padded splints were made use of. At the end of nine days, the swelling having been dissipated and the leg being straight, an immovable starched apparatus was applied. This remained in place forty days; and, when removed, the bones were found to be united, though with a displacement of the superior fragment of the tibia in front.—*Ibid.*

Case 4. Blanchetien, ætat. 34, entered La Charité, on the 1st of August, for a fracture of the fore-arm in its middle part, produced by a fall from a height of six or eight feet. Up to the sixth day the treatment consisted in bathing the part and the application of cataplasms. At this time the dextrine apparatus was applied.

About the tenth day M. Gerdy, finding the apparatus too loose, filled the inter-

* Gazette des Hôpitaux, No. 110, 1839.

stices with cotton. The ill success of another case in the wards at the same time, in which a similar apparatus had been employed, induced M. Malgaigne on the 1st of September to examine the arm, when it was found that consolidation had taken place, the ulna projecting backwards. The radius also was thrown backwards, and the limb so deformed that the movements of pronation and supination were performed but imperfectly.—*Gazette des Hôpitaux*, *No.* 110, 1839.

Case 5. At No. 6 Salle St. Jean, (La Charité,) is a man of good constitution, who six months since received a simple fracture of the tibia by a fall. The day after the accident an immovable apparatus was applied, which was allowed to remain on for seven weeks. During all this time the patient appeared to be doing well. When the apparatus was removed, acute pain was felt at the point of fracture; he was unable to walk without crutches; and, after two trials, a displacement of the fragments occurred, consolidation not being perfect. A second application of the apparatus was then made, which it became necessary soon to remove in consequence of the violent pain produced. At his entrance into La Charité, on the 26th of October, a dextrine bandage was applied and allowed to remain for nearly two months. When removed the leg appeared greatly reduced in size, and a considerable deformity existed in the front of the limb. No trace of the provisional callus could be felt, though no motion could be perceived at the seat of fracture.

According to M. Malgaigne, the want of success in the treatment of the above case was owing to the strong compression made by the immovable apparatus. This, being immediately applied, hindered the effusion of the coagulable lymph which goes to form the provisional callus, and the consolidation only had place at a late period, when the definitive callus was thrown out. One of the great objections, adds M. Malgaigne, to the immovable apparatus, is the obstacle which it offers to the formation of the provisional callus, and it is this obstacle which explains *the want of consolidation observed so frequently in this mode of treatment.*—*Gazette des Hôpitaux*, *No.* 7, 1839.

Case 6. A vine-dresser, ætat. 40, of a good constitution, fell and received a simple transverse fracture of the patella, on the 15th of January. The medical officer called upon to attend him applied first a bandage for the purpose of drawing together the fragments, and afterwards a starched bandage, extending from the toes to the upper part of the thigh; the limb was then put upon an inclined plane. The patient was visited a few times, but, as he scarcely suffered, the apparatus was in no way disturbed. On the 1st of March the attendant returned to remove the bandage, when the odour arising from the limb led him to believe that gangrene had taken place, and Dr. Defer was sent for. Dr. Defer found the limb in the following state: The toes which were not covered by the bandage were completely insensible and mummified. The bandage being removed the gangrene was perceived to extend to within seven inches of the knee and was arrested in its progress. The foot was cold and totally insensible; the epidermis was raised up and was beginning to be separated from the skin. The articulation of the ankle was exposed and the ligaments destroyed. The bones of the leg were also exposed in their lower third, and the tendons were in a sloughy state. Amputation was performed and the patient recovered.—*Gazette Médicale*, *No.* 28.

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33. *Comminuted Fracture of the Frontal Bone followed by Abscess of the Anterior Lobe of the Brain. Cure.*—Peter Michelet, ætat. 32, received a blow upon the forehead from a heavy stone thrown at him on the 1st of November, 1835. The severity of the blow was such as to knock him down and stun him. After a short time he recovered his senses, and was conducted to his home on foot. The wound bled freely. On the following morning he rose as usual and went on foot a distance of three leagues to market. During his journey he was seized with giddiness and headache which obliged him to stop. Notwithstanding this he continued to rise on the following days and go out as usual, though he had lost his appetite and suffered from heaviness of the head, vertigo, drowsiness and constipation. Despite these symptoms, Michelet remained till the fourteenth

day after the accident without consulting a physician. At this date Dr. De Rivière was called and found the wound almost cicatrised, situated at two inches above the root of the nose on the right of the median line. The scalp in the neighbourhood of the fracture was not adherent to the bone, and on making an incision over the part and introducing a finger an irregular depression of bone was perceived—a blunt probe could be passed into the cavity of the cranium to the depth of two inches. The patient at this time was labouring under slight stupor, drowsiness and constipation, and had involuntary emission of urine, and a strong, slow pulse. Sensibility was perfect. The wound was dressed with a poultice, and a purge and laxative drinks were administered.

On the 16th and 17th the wound was suppurating; the signs of compression of the brain were more marked. Pulse harder and very slow. Venesection; purge repeated; same dressing. From the 17th to the 21st he continued gradually growing worse. At the last date a crucial incision was made over the seat of injury in order to apply a trephine with a view of evacuating the abscess which it was believed had formed in the substance of the brain. Upon exposing the bone, it was found that the depressed fragments could be removed without the aid of the instrument, which was done. Immediately upon its removal a large jet of thick pus, of a greenish colour and very fetid, was thrown out; about two wineglassfuls of this were discharged, the latter part of it being mixed with a dark-coloured matter, apparently the remains of the cerebral substance which had been destroyed. After the evacuation of the pus all the symptoms of compression began to diminish; the patient spoke and aided the assistants to change his linen. The wound was covered with cerate, and lightly supported by means of charpie and a bandage. Absolute diet. The reaction following the operation was moderate, the discharge gradually diminished, and two months after the operation cicatrization of the wound was complete. At the date of publication of the observation (1839) the patient was following his usual occupations, and was in the enjoyment of perfect bodily health, with his mind in no degree impaired.—*Journ. des Connaissances Med. Chirurg. April*, 1839.

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34. *Influence of Position in effecting Reduction of Hernia.*—M. Benoit, in an article in the *Bulletin Medical du Midi*, quotes two cases illustrative of the utility of a recumbent position, with the feet elevated and the head depressed, in effecting a reduction of strangulated hernia. The first of these occurred in the practice of a provincial surgeon. The patient had been suffering from strangulated hernia, which resisted various means employed for its reduction, and it was resolved to divide the stricture. Whilst the surgeon was arranging in an adjoining room the instruments for the operation, a cry of joy from the patient soon brought the surgeon to his side. It appeared that in hopes of alleviating his sufferings, the patient, as he lay on his bed, had elevated and supported his feet against the wall, thus forming an inclined plane of his body, of which his feet were the highest and his head the lowest points. He had not been in this position many minutes when he perceived a rumbling in his abdomen, and the hernia was suddenly reduced.

The second case was one of strangulated inguinal hernia of the left side. M. B. tried the taxis, refrigerants, enemata, &c. without success. The symptoms being urgent, another surgeon was sent for. Whilst awaiting his arrival, M. B. recollected the case just quoted, and placed the patient across his bed, raised his feet against the wall with his head depressed, and in a short time the reduction took place.

Our able correspondent, Dr. S. Jackson, formerly of Northumberland, twelve or thirteen years ago, resorted to the same position as a means of reducing strangulated hernia in one case, and with equally happy results. (See p. 302 of this number.)

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35. *Extirpation of the greater portion of the left Clavicle.*—This operation has been performed by Professor G. Regnoli, of Pisa. The middle and sternal extremity of the clavicle were carious, and were removed, leaving only the

accromial extremity. The patient, ætat. 34, entirely recovered.—*Gaz. Méd. de Paris*, Sept. 14, 1839, from *Annali Medico-Chirurgici*, June, 1839.

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36. *Lithotripsy in Italy.*—Several Italian surgeons have devoted themselves with success to Lithotripsy. Dr. Pagello, of Venice, has performed this operation with success on a child six years of age; a Turin professor has performed it on two children between three and four years of age; and Dr. Capeletti, of Trieste, on one of three years and nine months of age. The calculus in this last case was eleven lines in diameter.—*Rév. Méd.* Jan. 1839, from *Annali Univ. di-Med.* 1839.

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37. *Statistical Account of the Cases of Stone Operated on in* 1838, by Dr. Rienzi. The number operated on was 36, 33 males and 2 females.

Of these, 19 were between 3 and 15 years, 14 between 16 and 50, and 3 were aged. The lateral operation was not had recourse to in all these cases; with a child the method of Celsus was employed; in the case of a female the calculus was extracted by enlarging with a bistoury a fistulous opening which communicated with the vagina.

Of the 36 operated on, 8 died. Autopsies were made in 5 of these cases. In 2 of them, ulcerations in the bladder existed with effusion of pus and urine into the pelvis. With a third, the left kidney was in a state of suppuration. A fourth had numerous abscesses in the lymphatic glands of the lumbar region of the pelvis. The left ureter was of the size of the small intestine and its parietes thickened and indurated. The fifth was labouring under a second attack of stone, having been previously operated on in 1819. Upon opening the bladder, a large quantity of pus mixed with calculous matter escaped. Death followed in thirty-six hours. The descending branch of the pubis of the right side was carious, and there was a collection of pus behind the symphysis. A scirrhous tumour, of the size of an egg, encrusted with phosphate of lime, existed in the *basfond* of the bladder. On the right side of the neck of the bladder, another tumour existed of the same nature, but in a state of ulceration.

Of the 8 who died, there were 6 adults, 1 child, and 1 advanced in life.

To the number above given, 5 others are to be added operated on by the lateral incision, of which 1 died, and 2 patients operated on at the hospital of Loretto, both of whom were cured.

General Resumé from 1821 *to* 1838.

	Males.	Females.	Cured.	Died.	Children.	Adults.	Old persons.
From 1821 to 1837,	538	15	471	82	282	215	56
In 1838, - -	41	2	34	9	24	16	3
Totals,	579	17	505	91	306	231	59

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Gazette Médicale, No. 37, 1839, from *Il Filiatre Sebesio.*

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38. *Statistics of Operations of Lithotomy, performed by Dr.* Campanella.

	Age.	Result.		
1.	6 years.	Discharged cured	on the	14th day.
2.	3 "	do.	do.	13th do.
3.	6 "	do.	do.	16th do.
4.	3 "	do.	do.	15th do.
5.	5 "	do.	do.	40th do.
6.	12 "			
7.	3 "	do.	do.	15th do.
8.	6 "	do.	do.	30th do.
9.	6 "	do.	do.	15th do.
10.	6 "	do.	do.	10th do.

Dr. C. performed the lateral operation by the method of Cheselden.—*Gaz. Méd. de Paris*, 14th Sept., 1839, from *Repert. delle Sc. Fisico-Médiche del Piemonte.*

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39. *Statistics of Operations of Lithotrity.* By Dr. Campanella.

	Age.	Result.
1.	18 years.	Discharged cured the 15th day.
2.	30 "	do. do. 40th do.
3.		Died six months after the operation without exhibiting the least alteration in the urinary passages.
4.	44 "	Cured in three operations.
5.	77 "	do. do. do.
6.	57 "	do. 20 do.
7.	64 "	do. 12 do.
8.	75 "	Many operations; two relapses. Cured.
9.	76 "	Cured in one operation.
10.	49 "	do in three do. Discharged in twenty-eight days.
11.	43 "	Discharged in three months entirely cured.

Dr. C. operated at first with the three branched forceps. In cases 5 and 6, he operated by percussion, with Charriere's instrument. In the other cases crushing with this last instrument sufficed. In case 8 there was a stricture of the urethra of forty years duration, which had caused three urinary abscesses in perineum. The bladder was columnar. The first stone seized was two inches long.—*Ibid.*

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40. *Moxas of Wafers.*—Professor Graefe employs moxas made of wafers, dipped in a mixture of three parts oil of turpentine, and one part sulphuric ether. It is necessary, before applying this inflammable matter to the skin, to carefully remove the superfluous liquid. These moxas are said to easily ignite, to burn promptly and uniformly, and not to crepitate.—*Lancette Française*, Jan. 29, 1839.

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41. *On the Treatment of Inguinal Hernia by Trusses.* By M. Malgaigne. The presence of a direct or oblique inguinal hernia shows a manifest predisposition to the development of a second; so that after an uncertain time, every one who has one hernia should reckon upon having another.

Every bandage hitherto devised for maintaining in place either a congenital or accidental oblique inguinal hernia is formed on a vicious principle, and requires a complete alteration. They all compress chiefly the external ring and act scarcely at all upon any part of the canal; the new principle which I wish to establish and which I have already applied, both in public and private practice, in a number of cases, consists in making pressure on the whole canal; but chiefly on the internal ring. The chief inconveniences of the old method are, 1, that, in closing simply the external ring, it allows the hernia to remain in the canal, and thus does no more than transform a complete into an interstitial hernia; 2, it only by chance produces a radical cure, and, even in children, the proportion of unsuccessful cases is enormous; 3, the hernia is evidently much less effectually detained, as is instantly confessed by the majority of those patients who have tried both methods; 4, when the hernia requires very forcible compression, all the bandages at present employed, by pressing on the pubes, compress the spermatic cord, and hence arises a frightful number of engorgements of the cord and of the testicle, an effect which is not produced by the new method. This method was applied and described by Sir A. Cooper, but is not known or is neglected in England, and is not mentioned in the writings of Samuel Cooper or Lawrence. This singular fact may possibly be somewhat explicable by the following consideration. Ruptures present themselves in practice under two general forms; either simple or reducible with facility, or complicated with serious accidents relating to their strangulation. The latter case, which is

somewhat rare, requires prompt decision, and a dexterous and practised hand; it belongs to the domain of surgery, properly so called, and all the great and magnificent works of the modern schools have been chiefly engaged in the consideration of strangulated hernia. Surgeons have disdained the simple and reducible hernia; they have only superficially studied them, and they have abandoned their treatment to the hands of rupture-bandagers. So that these lesions, so numerous and so important, present in our days the strange anomaly, that surgeons study the disease, but do not occupy themselves about its treatment, and that bandagers are charged with the treatment of the disease without being acquainted with it. I was first struck with this state of things, when first appointed to the care of cases of hernia at the "bureau central" of the Parisian hospitals. The average number of those annually applying for trusses and pessaries is 3000; and in the two months of October and November 1835, I was able to collect 435 written observations, and to obtain results worthy of communication to two academies. Since that time I have silently continued my work, wishing to arrive at results as complete as possible. During the last three years, my employment at the "bureau central" and in the hospitals, my connection with the chief bandagers of Paris, and my private practice, have enabled me to see more than 2000 cases of hernia, to try almost every known bandage, and to determine the conditions under which bandages should be employed, and to place on exact foundations the science of prognosis and of indications. In this place, I merely wish to speak of the treatment of oblique inguinal hernia, the most common of all, and consequently the most important to the practitioner. The oblique inguinal hernia does not always present the same degree of development, and I have assigned to it the following degrees or periods: 1. When the hernia projects only through the abdominal ring; this I call *commencing hernia.* 2. When it occupies the inguinal canal; M. Goyrand has applied to this the name of *interstitial hernia*, a useful name to continue. 3. When it projects beyond the external ring; this is *bubonocele.* 4. When it descends into the scrotum; *oscheocele.* The latter two degrees are well known; the only practical difference which they present relates to the strangulation, which is more dangerous in bubonocele than in oscheocele, but in common cases they offer the same indications, and I shall not stop any further to notice them.

Interstitial hernia is often not recognized, unless it is very large, which is rarely the case; since, upon applying the finger upon the external ring, no projection is felt; the complaints of the patient are ascribed to an imaginary feebleness of the abdominal parietes, or to some other cause. This degree of hernia is very common, and, as strangulation may happen in this case, it is necessary to fix to it serious attention. Lastly, *the commencing hernia*, the first degree of the disease, has been entirely neglected, both by bandagers and surgeons. The reasons of this are easily given. The patient never consults a surgeon at this period of this disease; and I confess that I have not yet had occasion to decide in a case of this kind. It is only in secondary hernia that I have learned to recognize it, after having appreciated all the importance of such a diagnosis; and as this importance results from a fact unknown before my time, it is not to be wondered at, that surgeons, occupied by a large hernia of one side, should be but little careful about an almost imperceptible swelling of the opposite side. But this swelling, however small it may be or may appear to be, is the certain sign of the near approach of a second hernia, and one may vainly check in the most perfect manner the primitive hernia, the second will not the less certainly appear as soon as this slight projection has been perceived. I will return to the subject of these secondary herniæ; I now wish only to establish the course which inguinal hernia generally follows in its development, as far as the fact bears upon treatment.

Hernia most frequently passes successively through these four degrees. Thus, an individual exerts himself and feels a crack in the inguinal region; he sees nothing at first, and it is only after eight or fifteen days that he sees a small tumour projecting beyond the ring, and afterwards the bubonocele becomes oscheocele. From this account, which is applicable to the majority of patients,

one may conclude that the first effort has opened the internal ring, and that the hernia has subsequently passed to the extreme degree. Frequently, in these accidental herniæ, the intestines descend at once into the canal; I have seen some of them suddenly pass to the third degree; and sometimes the hernia becomes strangulated at the moment of its production. But I have never known an accidental hernia suddenly arrive in the scrotum. Each of the first three degrees may remain a longer or shorter period: thus, for example, I have seen the interstitial hernia develope itself so as to acquire half the size of the first, and remain for many years without escaping from the inguinal ring; sometimes, after having made its nidus in the canal, it finishes by making its escape externally; and this long delay in the canal, recognizable by the dilatation of its anterior wall, appears to me to be the essential cause, not hitherto recognized, of the displacement of the vessels of the spermatic cord. This being the state of things, one may judge of the advantage derivable from the application of bandages to the external ring, according to the common method. They transform bubonocele or oscheocele into interstitial hernia, and only prevent strangulation by the external ring, leaving the individual exposed to the danger of strangulation by the abdominal ring. They do not even remedy the common inconveniences of simple hernia; and as the pad does not allow any thing to escape externally, and very much conceals the projection of the canal, the continuance of inconvenience has been attributed to the most fanciful causes. [A case is related showing the inutility of the ordinary bandages. And M. Malgaigne continues,] I might multiply cases of this kind; but any one may make upon the first hernia which he witnesses, an experiment which will lead to the same results. Apply the thumb upon the external ring and nothing escapes externally; the patient says that his hernia is kept up. Place the thumb upon the internal ring, and the patient will say that it is much more effectually kept up, and that he finds, on making any exertion, that there is greater firmness of the abdomen. One may easily understand, also, that as the hernia is not completely maintained by the common mode, a definitive cure cannot be obtained. The external ring only is acted on; the obliteration, if it take place, is only of the external ring, and the canal will always remain open for interstitial hernia. Now and then, as exceptional cases, cures have taken place; but as it has not been possible to reproduce them with any certainty, by the same means, the facts have been doubted. It has been simply believed that the truss sufficed for the cure of young subjects; nevertheless the number of exceptions to this would scarcely be believed. M. Bourat, one of our best bandagers, told me, with an air of triumph, that, out of fifty children, he probably did not fail to cure ten. But this I cannot, from my own experience, believe. I have had innumerable cases of congenital hernia under my own eyes, which have existed twenty, thirty, forty, and in one instance, fifty-three years, notwithstanding the employment of the common bandage. But how comes it that some have been cured, but that others have not? In my opinion, this depends on the form and on the size of the pad. If the pad rest only on the external ring, there will be no more cases of cure in children than in adults. But if by a happy circumstance, the pad be badly made, too large for the object had in view, it rests on the canal, and may effect its obliteration. In young subjects, the canal is so short as to be readily compressed by a pad of moderate size, even badly placed; and the greater vitality explains the more frequent success; but in the adult, very large pads would be required to produce the same effect; and in simple cases, too large a pad is considered as ill made: I have seen a cure of this kind entirely accidental. Lastly, as a pad of moderate size may rest upon the external ring, without being at all supported by the os pubis, it happens, if the pressure is at all considerable, that pain and excoriations of the skin are the consequence, together with engorgements of the cord terminating in varicocele or engorgements of the testicles. Many patients, treated during the late years by the wooden pads of Carpenter, which rest upon the external ring and the pubis, have been compelled to give them up in consequence of pains and excoriations. M. Devergie sent to me a young man with a double inguinal hernia, and at the same time, an orchitis of

each side, the effect of pressure by a common truss. Excepting the complication of hernia with the testicle in the canal, I cannot imagine a more embarrassing case. I have examined at the "bureau central," in a certain number of individuals, what was the proportion of engorgements of the cord and of the testicle. In 200 cases of hernia, I have found sixty-five lesions of this kind; i. e.

Engorgements of the cord, most frequently with varicose dilatation	40
Engorgements of the testicle	23
Atrophy of the testicle	1
Hydrocele	1

One must not, certainly, attribute all these secondary lesions to the action of the truss; for I have found varicocele and engorgements of the cord and of the testicle in individuals who have had old hernia, but who had never worn a truss; and here the cause is the pressure of the hernia itself. And it may be asked, if in the other cases the pressure of the hernia would not have sufficed to produce the same effect; but, in addition to the fact that the action of the truss is too direct to admit of denial, the most favorable conclusion for the common method would be that it is as likely to be the means of producing engorgements of the testicles as herniæ which are not reduced.

The motive which has induced M. Malgaigne to write this paper, is that the old method of employing trusses is almost universal in Paris, and because, as he adds, although the revolution is made in the science, it still requires to be made in practice.

The consequences deducible from what has been said, are, that every hernial bandage which presses upon the external ring, in inguinal hernia, is a bad bandage; and that the first principle applicable to the maintenance of hernia within the abdomen is to make pressure upon the internal ring and upon the canal. The form, dimensions, and degree of pressure of the pad are subjects to be hereafter treated of, together with the questions—In what case is a radical cure by means of a truss, possible? and what are the indications and chances of success?—*B. and F. Med. Rev.*, Oct., 1839, from *Bulletin Gén. de Thérap.*, *February*, 1839.

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42. Roux *on Lacerations of the Perineum and Recto-Vaginal Septum.*—Partial laceration of the perineum is an accident of very frequent occurrence in women who have borne children; but fortunately it is not of serious consequence, as Nature is almost always sufficient to effect a cure.

In some rare cases—where the vulva chances to be directed or turned forwards more than usual, and the perineum is therefore somewhat longer than is common—the rupture has taken place in the centre of the stretched perineum, and the head of the child has actually been protruded through the ruptured opening: M. *Moreau* states that there are at least forty cases of this strange accident on record.

Of a much more serious and distressing nature is the misfortune of a laceration along the whole extent of the perineum, including the sphincter ani and perhaps part of the recto-vaginal septum. As might be expected, this lamentable accident is very generally the result of a first accouchement; and more especially in those cases where recourse has been had to the use of instruments The condition of the patient soon becomes most miserable: the power of retaining the alvine and vaginal discharges is either entirely, or in a very great measure, lost; and as the efforts of unassisted Nature are rarely sufficient to effect a healing of the divided parts, the life of the poor woman is generally wretched in the extreme. True it is, that instances are known where women so affected have contrived to conceal their condition from their husbands, and have actually conceived and given birth to children; but such cases constitute only the exception to the general rule.

As long as the sphincter ani is not torn across, the treatment of a lacerated perineum is quite simple, and is almost always successful. All that is requisite

is, that the patient lie a-bed with the limbs retained close together, and keep the parts clean by frequent ablutions.

The treatment of the more serious accident—when the vulva and rectum are lacerated together, so that they communicate with each other, and form, as it were, a common cloaca—has not certainly been studied by surgeons with that attention which its importance requires.

Even in some of the most recent treatises on surgery, the subject is scarcely, if at all, alluded to. Judging from the reports of such cases as have been published, the attempts to effect a cure have very generally failed. According to M. *Roux*, French surgeons have been seldom willing to interfere, as there seemed to be such feeble hopes of success.

He is now of opinion that the failure has been mainly attributable to the faulty means employed in retaining the disjoined edges together.

It was in 1832 that he was fortunately induced to substitute the use of the *quilled* in the place of the *interrupted* or the *twisted* suture—one of which methods had been hitherto uniformly practised.

Since that period he has operated in eleven cases of complete rupture of the perineum, with the good fortune of effecting a cure in the most of them.

The history of his first case is especially interesting, and deserves to be mentioned. It occurred in a young lady, (the wife of a medical man,) who most urgently requested M. *Roux* to try some operation to relieve her from her miserable condition. The following was performed: The edges of the fissured parts being previously *avivés*, four needles were passed through from one side of the perineum to the other, and the *twisted* suture was then practised, as in the ordinary operation for hare-lip. Every thing seemed, for some time, to promise well; the threads were removed on the seventh day; but two days subsequently the line of union gave way, and the patient was as miserable as ever. She urged, however, a second attempt to be made; and M. *Roux*, having studiously considered all the particulars of the case, now resolved to substitute the *quilled* in place of the *twisted* suture, in the hope of being thus able more effectually to bring the entire depth or thickness of the fissured parts in strict contact, and to keep up a certain degree of pressure on these parts during the process of cicatrization.

Having again made the surfaces to be united raw, he passed a largish dissecting needle, armed with a double ligature, from without inwards, and at about an inch or rather more from the edge of one flap, to the very deepest part of the wound close to the anus; then drawing it outwards, he now passed it from within outwards through the opposite flap. Two other sutures were then passed in nearly the same manner: the one at the centre of the fissured perineum, and the other close to the *fourchette*. The needles having been withdrawn, a portion of a caoutchouc bougie was now laid along the right side of the perineum, between the loops of the ligatures, and the other ends of the ligatures were drawn tightly, so as to cause the bougie to press with tolerable firmness upon the right side of the perineum. A second portion of bougie was now laid along the left side of the perineum between the two threads of each double ligatnre, and secured in its place by tying the ligatures so close and firm upon the bougie as to cause it to press well upon the subjacent parts: "we need have no fear of drawing the two edges too firmly together," says M. *Roux*. As the lips of a wound are apt to be somewhat everted when a quilled suture is employed, it will be generally found necessary to pass two or three stitches of the interrupted suture, so as to bring and retain them in strict apposition. The following remarks on the superiority of the quilled over every other form of suture, in the accident now under consideration, are extracted from a memoir, which was recently submitted by M. *Roux* to the Royal Academy of Medicine.

Having detailed the particulars of a case wherein it had been successfully used, he proceeds to remark: "We can now judge of the superior efficacy of this (the quilled) suture in the treatment of lacerated perineum. As it is with curved needles that ligatures are passed, it is obvious that a much greater depth or thickness of parts can be embraced than if straight needles were used. The

ligatures, too, although they may have a tendency *se redresser*, in consequence of their two ends being drawn tightly together, can never become so unyielding and so straight, as straight needles—such as are used in practising the twisted suture—must necessarily be. The uniform pressure from the cylinders, placed along each side of the wound, cannot fail at the same time to retain the two edges much more accurately than can be done by means of any other form of suture. We may allude also to the circumstance of the hurtful constriction of the two edges being in a great measure obviated by the interposition of the cylinder between the ligatures and the skin: hence there is much less risk of the sutures working their way out, before cicatrization has taken place. Moreover—and this is not unimportant—all escape of any fluid from the vagina or rectum between the approximated edges, is much more effectually prevented in this than in any other way; as the communication between the bottom of the wound and the surface is quite closed up."

With respect to the medical treatment of the patient, M. *Roux* very properly recommends that she should be kept for several days before the operation on a very light unirritating diet, and that the bowels should be acted upon gently but regularly, so as to remove, if possible, all their fæculent contents. It is of the greatest consequence that they should be quite quiet, and have no tendency to be relaxed on the day of the operation, nor yet for a week afterwards; as it must be obvious that the efforts of the rectum to empty itself must necessarily tend to strain, and perhaps to burst open again, the recently-united surfaces. In some patients it will be found necessary to exhibit opiates, for the purpose of inducing the requisite constipation. During the first six or seven days, the food and drink must be taken in as small quantities as possible. At this time, if hitherto there has been no action, a gentle aperient may be given, before the ligatures are withdrawn—which step should not be taken until the following day.

As affording another precaution to prevent any disturbance of the wound, the urine should be drawn off with the catheter at regular intervals: perhaps the best plan is to leave the instrument in the bladder. It is scarcely necessary to add, that the patient must remain entirely quiet: to prevent the movement of the limbs, they should be tied together.

We shall now briefly mention the result of the eleven operations which M. *Roux* has performed for the cure of lacerated perineum, by means of the *quilled* suture. In all, a copious suppurative discharge from the vagina followed on the second or third day, and an uneasiness, more or less considerable, was experienced in voiding the urine. That portion of the fissure nearest to the anus is almost always the latest of healing. At this point there usually remains for some time after the rest of the wound has cicatrized a small gap, such as follows the operation for fistula ani; and even when the greatest care has been taken to pass one of the ligatures through the *eperon* of the recto-vaginal septum, a length of time is required before the communication between the two passages is entirely obliterated;—the escape of the intestinal gas and fæculent contents retarding the complete coalescence of the edges of the opening. By proper attention, however, and by the occasional application of the nitrate of silver, the fistula gradually contracts, and will ultimately cicatrise. Of the eleven cases, a cure was effected in seven by a single operation. In one the operation was unsuccessful the first time, but succeeded perfectly the second time. Two of the patients died—one from the effects of phlebitis, or of purulent absorption; and the other, (in whom the laceration of the perineum was complicated with prolapsus of the rectum and of the vagina,) from chronic-enteritis, to which she had been long subject. In the remaining case, every thing went on favourably till the fourteenth day, when, after a sudden action of the bowels, the adhesion of the united surfaces gave way: a second operation is, however, to be performed.

Before drawing our remarks to a close, we shall very briefly allude to those cases, where a fistulous communication between the rectum and vagina, unaccompanied, however, with any laceration of the perineum, has taken place.

It is a much less serious accident than that of which we have been treating hitherto. Under judicious management, the efforts of nature alone will generally suffice to effect an obliteration, unless the fistulous opening be very considerable.

M. *Saucerotte* mentions a case, where the perineum and part also of the recto-vaginal septum were lacerated during a difficult parturition, the sphincter ani, however, remaining entire. Four months after the occurrence of the accident, the edges of the fissure were *avivés*, and brought together by means of six points of the interrupted suture. The bowels were not allowed to act for eleven days; but then, after an evacuation, three of the stitches gave way: the extent of the laceration, however, was reduced by one half. A second operation was, therefore, performed; the sphincter ani was first divided, and after paring the edges of the fissure anew, four stitches were introduced. After the lapse of three months the fistula was quite healed.

On this case M. *Sedillot* has, it appears to us, very justly remarked that the sutures seem to have been not only of no use, but rather to have retarded the process of cicatrization; and that if merely the edges of the fissure had been *avivés*, and the sphincter ani divided,* the cure would probably have been much mote rapid. This opinion is confirmed by the result of a case reported by *Noel* in 1794. In this case the entire perineum, the sphincter ani, and a portion of the recto-vaginal septum had been lacerated. After the edges of the fissure had been made raw, the perineum was brought and retained together by means of two twisted sutures, one near the anus and the other close to the *fourchette*. The limbs of the patient were then tied together; and an open state of the bowels was encouraged by the administration of laxative medicines.

On the sixth day after the operation, the anterior needle being withdrawn, all the alvine contents were found to pass by the anus; the second needle was not removed till the twenty-fifth day, and by that time *the whole had cicatrised.*

It may, therefore, be fairly questioned whether it is very advisable to employ sutures in the treatment of a recto-vaginal fistula. If the perineum be lacerated at the same time, the attention of the surgeon should be mainly directed to get rid of this accident, and leave the contraction and coalescence of the fistula to nature, after paring its edges, and perhaps occasionally touching them with some stimulant or caustic.—*Med. Chirurg. Rev.*, from *Journal des Connais. Med. Chirurg.*

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43. Jobert *on Internal Piles.*—It is now generally admitted by surgeons, that excision is the most effectual, and at the same time the least dangerous, method of removing internal piles. The only serious objection to its adoption is the risk of consecutive hemorrhage. "In two-fifths of the patients on whom I have operated," says M. *Dupuytren*, "and in whose cases I did not employ any hæmostatic means after the excision, an internal hemorrhage supervened." The quantity of blood thus lost in some cases is very alarming, the rectum and even the greater part of the colon becoming filled. Several patients have died in consequence. The absence of valves in the veins of the portal system will account for the profusion of the discharge.

To prevent this alarming accident, *Dupuytren*, after having tried all other expedients, declared that the only one to which the surgeon could safely trust was the actual cautery applied to the bleeding surface. He assures us that by this means he always avoided any consecutive bleeding.

M. *Jobert*, however, states that he has, on several occasions, known alarming hemorrhages supervene after the use of the cautery. It is also to be remembered that this violent remedy always induces most distressing inflammation and tumefaction of the cellular and adipose tissue of the anus, and that the rectum and bladder not unfrequently sympathise most severely. To avoid these

* Mr. *Copeland* has, we believe, recently pointed out the advantage that may be derived in the treatment of recto-vaginal fistulæ, from dividing the *sphincter ani.* It would seem that in this idea he has been anticipated by the French surgeons.

inconveniences, M. *Jobert* has, of late years, adopted the following practice in preference:

The patient having made the piles to project out as far as possible, the surgeon lays hold of them by means of a hook, so as to retain them there as long as is necessary, and divides them slowly and carefully, applying a ligature to each vessel, as it starts; (je les devise lentement, *et à mesure qu'un vaisseau fournit du sang, j'en opere la ligature au moyen d'un fil simple.*)

The gut should not be returned immediately; but if, after it has been well sponged, no bleeding points be seen, it may be replaced with a perfect assurance that no consecutive hemorrhage of any importance will follow. The patient usually recovers without much suffering.

M. *Jobert* has related several cases in illustration of his practice.

A gentleman had for upwards of ten years suffered exceedingly from pain and suffering after defæcation, in consequence of numerous piles, internal as well as external. Some of these were ulcerated on their surface; and hence an almost constant purulent discharge and occasionally also very copious hemorrhages flowed from the bowel. To add to the patient's sufferings, the gut became frequently prolapsed after every alvine evacuation. M. *Jobert* advised him to submit to an excision of the hemorrhoidal tumours. Several arteries and large veins were tied; no hemorrhage followed; and, at the end of fifteen days, the patient was completely well.

The case also of a lady, who for several years had suffered martyrdom from the anus and extremity of the rectum being almost quite plugged up with a mass of hemorrhoidal tumours, is detailed at considerable length. M. *Jobert* at first hesitated what line of practice to pursue, in consequence of the size of the varicose vessels, and of the extent of the disease. At first he proposed to adopt *Dupuytren's* method of using the actual cautery after excising the tumours; but finally he followed the plan recommended above—*c'est à dire la section graduée et la ligature des vaisseaux à mesure qu'ils etaint devisés.*

The cure was quite satisfactory.

M. *Jobert* assures us that he has now adopted this practice in a great many cases, and he is convinced that it is by far the most advisable for the removal of internal hemorrhoids.—*Ibid.*, from *Gaz. Med. de Paris.*

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44. Jobert *on Fissures of the Anus.*—It is only of late years that this most troublesome and distressing affection has been properly understood. It used to be confounded with syphilitic rhagades and ulcerations. It is to the late Baron *Boyer* that we owe the first right description of the disease, and of the most successful mode of treating it. Regarding the fissures as the result or consequence of a spasmodic contraction of the sphincter ani, he showed the necessity of dividing the margin of the anus including the fibres of this muscle; and his practice has been almost universally followed.

The practice is right; but the theory is more than questionable. The spasmodic contraction of the sphincter seems to be rather the effect than the cause of the ulcerated fissure of its mucous covering and of its surface. It is the irritation, to which its superficial fibres are exposed, that induces the spasmodic contraction of the muscles. It is of importance to attend to this circumstance, viz. whether the ulceration is limited to the mucous lining of the gut or whether it has extended to the fibres of the sphincter ani, in the management of the disease. In the former case it is rarely necessary to have recourse to the scalpel; the ulcerated fissure will generally heal under the use of caustics, &c. But when once the fibres of the sphincter are involved, and the consequent spasmodic contraction of the muscles is induced, the application of any irritating substance tends only to aggravate the suffering, and the only successful mode of treatment, it has been supposed, is fairly to divide the muscles across.

M. *Jobert* has found, however, that even under the latter circumstances, it is not always necessary to effect a complete division of the muscles—one of the occasional troublesome results of which is to cause an incontinence of the rectum.

He has succeeded in removing the disease by simply excising, either with a scalpel or with scissors, the membrane lining the ulcerated surface and a small portion of the subjacent soft parts: the fissure is thus brought to the state of a simple wound, and the pain occasioned by the contact of the two lips no longer continuing, the spasmodic contraction of the sphincter ceases.—*Gazette Médicale.*

In a recent number of the Journal "*Experience*," M. *Mondiere* has published several cases of fissure of the anus successfully treated by the introduction, night and morning, of bougies (*meches*) of lint well smeared with an ointment composed of lard, sugar of lead, and extract of belladonna; and, when the contraction of the anus is overcome, by the application of lunar caustic to the surface of the fissure. It is to be remembered that the introduction of any foreign substance into the rectum, when a fissure exists, is almost always attended with severe pain. We must not, therefore, be induced to discontinue the attempts to dilate the anal orifice, although the patient should complain for some time after each introduction.

M. *Mondiere* does not seem to have been aware of the distinction in cases of fissure of the anus pointed out by M. *Jobert*, and mentioned above.—*Ibid.*

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45. *On Torsion of the Arteries.*—Dr. Remak recommends a modification of the operation of torsion of the arteries, which consists in seizing the vessel transversely with a pair of sharp wedge-shaped forceps, and then pressing forcibly, so as to divide the internal coat. The extremity of the artery is then seized with another pair of forceps and twisted, while the torsion is prevented from extending up the artery by the first pair. The vessel is thus less injured than in the common proceeding, and the internal coat, which shrinks after being divided, offers an effectual barrier to the blood. The operation was tested experimentally upon a horse: the carotid was divided, and torsion, performed as recommended above was sufficient to restrain the hemorrhage, even when the horse was made to trot briskly.—*B. & F. Med. Rev.*, from *Med. Zeit.*, *No.* 6, 1839.

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46. *Artificial Anus formed in the left Lumbar Region.*—In our preceding No., p. 228, we noticed a case in which this operation had been performed by M. Amussat, and we find from recent journals, that it has been again resorted to by the same distinguished surgeon in a second case.

The subject of the latter was a M. T., aged 62, of a very feeble constitution, and habitually a sufferer from costiveness and piles. "Defecation was accomplished with extreme difficulty, and the fæces frequently accumulated in the rectum so as to render it necessary to extract them. The stools were generally passed with blood.

"For the last three years, in addition, the fæces were mixed with purulent and ichorous mucus, and exhaled a very fetid odour. The different methods of treatment adopted by this serious affection, which seemed to be seated in the great intestine, were of no advantage.

"M. T. consequently determined to come to Paris, about the 15th of May, 1839. His strength diminished every day, and he was extremely thin; and when the stools came away after the constipation, which was continually increasing in obstinacy, he felt excessively exhausted.

"Dr. Foville being consulted examined the rectum, where he ascertained that at the distance of two inches and a half from the sphincter there was a carcinomatous tumour, which had ulcerated, and which in some measure blocked up the intestine. This tumour was formed by a scirrhous prominence in the shape of an irregular ring studded with knots, into which it was difficult to introduce the end of the forefinger. On inserting a *porte-empreinte*, it was found that there was a stricture an inch and three-quarters in length. The obstacle which had stopped the course of the fæces, and the real source of the morbid secretion, were now ascertained. The correctness of M. Foville's diagnosis was acknowledged in a consultation at which MM. Recamier, Amussat, Breschet, and Puyoo, were present. Different modes of treatment were proposed. Both dilatation and the use of a ligature were rejected. Excision was equally objected

to, as it was feared that even a slight hæmorrhage might be fatal to a patient who was already so remarkably weak.

"The method finally resolved upon was to crush the tumour, which was proposed and put into execution by M. Amussat, on the 30th of May. The operation was performed with long forceps which pinched and crushed the most prominent points of the cancerous tumour. The patient felt scarcely any pain. Nothing came away during the operation but a small quantity of blackish blood mixed with ichor. A sort of fleshy detritus was discharged at the same time by the anus. It was thought proper to keep up a continued stream of cold water in the rectum, in order to prevent the occurrence of inflammatory symptoms.

"Some sloughs or fragments of atrophied membrane came away in consequence of the efforts made to detach them.

"A week after this operation it was agreed that to complete its effects, cauterization would be necessary; M. Amussat cauterized seven times, by means of a speculum and cylinders of caustic potash, with intervals of three or four days between each application, without any sign of inflammation appearing about the bladder or peritoneum.

"Each time that the patient was cauterized, small refrigerating clysters were prescribed. Under the influence, either of the crushing or the cauterizations, which were applied from below upwards, and from within outwards, the tumour was reduced to little more than half its size. Meantime, M. T.'s general condition grew worse. The stools did not occur till after a lapse of ten or twelve days, and then with such violence as to lower the patient till he nearly fainted. His attenuation was extreme, and the skin on the sacrum was on the point of ulcerating. Hence, it was not thought prudent to continue the cauterizations, which must have been multiplied, in order to destroy by successive layers what still remained of the tumour.

"M. T.'s symptoms were so extremely serious, that the only alternatives were to abandon him to a speedy death, or to adopt the only resource of the surgical art in such circumstances. The operation for artificial anus, which had lately been crowned with success, naturally suggested the thought of trying it on the present occasion. The double object might here be attained of remedying the retention of the fæces, and obviating their action upon the diseased rectum. On the 13th of July, there was a fresh consultation, at which Dr. Seguin was present, in addition, and at which the necessity for the operation was unanimously resolved upon. It was performed by M. Amussat on the following day according to the method he had already followed.

"An incision four inches and a half in length, at the distance of four fingers' breadth from the spinous processes of the vertebræ, was made in the middle of the space comprised between the last false rib and the superior margin of the os ilium.

"Towards the anterior angle of the wound a membranous projection was observed, formed by the peritoneum, and below which seemed to be the small intestines.

"The colon in the left lumbar region was strongly drawn back upon itself, and was covered in a great measure by the quadratus muscle, whose fibres it was necessary to cut across. The intestine having been taken hold of with the necessary precautions, was incised in about the posterior half of its circumference. Nothing came out but gases and some small balls of fæcal matter. The colon was then drawn towards the anterior commissure of the incision made in the integuments, and fixed there by four stitches of the interrupted suture. Three stitches of the twisted suture were then passed through, to bring together the lips of the wound, but leave the intestinal aperture entirely free.

"There was no general reaction, so to say. The feverishness under which the patient had continually suffered for a long time, particularly towards the evening, was scarcely increased during the three or four days which followed the operation.

"In spite of the opening thus made in the digestive tube the fæces did not immediately change their course; watery injections thrown into the colon passed

entirely by the natural anus. The anormal orifice did not give vent to the fæces till the 18th of July, and the evacuation was very copious. For some days the fæces continued to pursue their accustomed course, gases and liquids alone being discharged by the lumbar aperture. In order to dilate this orifice, it was necessary to employ, in succession, prepared sponge, elastic gum tubes, and at last wax bougies. These dilating substances facilitated the passage of the fæces by the artificial aperture.

"To sum up, M. T. is evidently in better health than he was three months ago. He has been able to set off for his residence in the country. The hectic fever has disappeared; and the skin, which was yellow, and of an earthy tint, is growing clear. All the functions have been re-established as well as so long and so great a deterioration of the system will permit. There is no longer any tympanitis, nor any forced stagnation of the fæces. The stools are regular, and figured fæces are expelled from the artificial orifice.

"The tumour in the rectum has remained stationary; it has merely become harder, which must render it less capable of being irritated by the contact of the fæces, which may still continue to pass by the rectum, but which do so less and less every day.

"Narcotic and chloruretted injections were indicated."

This as well as the previous operation speak in favour of Callisen's method as modified by M. Amussat. These modifications are as follows:—"1. Instead of an incision parallel to the external margin of the quadratus, he makes a horizontal one, which renders it more easy to uncover the intestine, and carry it to the anterior angle of the incision.

"2. The intestine is incised only in the posterior half of its circumference. This precaution will doubtlessly prevent the troublesome protrusion of the mucous membrane externally, and it will facilitate the cure of the artificial anus itself, when the obstacle which has opposed the expulsion of the fæces has disappeared. This kind of obstacle comprehends various causes susceptible of being removed or combated, such as hardened and accumulated fæces, polypi and other tumours, calculi, syphilitic vegetations, collections of different kinds in the pelvis, &c.

"Thus art may hope to remedy the inconvenience which it has caused for the preservation of the patient; but, if we cannot hope to re-establish the natural course of the fæces, their new mode of passage will have a favourable influence on the morbid growths existing in the sigmoid flexure of the colon or in the rectum. The vitality of the tunics of the intestines being diminished, the pathological alterations of a scirrhous character situated in them will go through their final transformations more slowly; and this slackening in their destructive progress will be another benefit derived from the artificial anus.—*Lond. Med. Gaz.* November, 1839.

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47. *Historical Notices on the Occurrence of Inflammatory Affections of the Internal Organs after External Injuries and Surgical Operations.*—This is the title of a very interesting paper in the Number of the *Edinburgh Medical and Surgical Journal* for October last, by Dr. William Thomson. The following are the conclusions which the author draws from his researches:

1. That individuals labouring under a chronic affection of any internal viscus are liable to have an acute inflammatory attack induced in that viscus, by local injuries of remote parts of the body.

2. That inflammatory affections of different organs and textures are liable to occur in individuals who have suffered local injuries, but in whom there is no reason to suppose any disease of these viscera to have existed previously.

3. That different viscera are liable to be affected in different cases of injury of the same part of the body; and that, on the other hand, the same viscera may become affected in cases of local injury of different parts of the body.

4. That in many instances of local injury, pus is effused into remote organs, though suppuration has not occurred in the seat of the primary injury.

5. That the recurrence of affections of remote organs in cases of this nature

is generally accompanied by some change in the appearance of the primary injury—as the cessation of the effusion of pus in cases in which suppuration had commenced.

6. That these secondary affections of remote organs occur at very different intervals of time after the reception of the primary injury.

7. That symptoms occasionally occur in cases of this nature, that enable the practitioner to determine which organ is affected—as cough, when the lungs, and jaundice when the liver, become inflamed.

8. That in most instances, however, the progress of the disease in the remote viscera is very insidious, and affords few or no indications of its existence.

9. That the most probable mode of preventing the occurrence of inflammation in remote organs, subsequently to injury or amputation, is to moderate the constitutional inflammatory tendency, which local injuries produce to a greater or less degree, and particularly to direct these precautions to the organs that may be known to be predisposed to disease, or that show any tendency to become affected.

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48. *Tracheotomy in Croup.*—It appears from a recent discussion at the Royal Academy of Medicine, that of 140 patients labouring under croup, on whom tracheotomy had been performed, 28 were cured, and 112 died. When the character of the disease is considered—the aggravation of the inflammation likely to be occasioned by the incisions into the inflamed part—and the delay and difficulties generally thrown in the way of the operation, this result is more encouraging than we had been led to expect.

The following table shows the names of the operators and the results in the cases alluded to:

M. Amussat, operations	6, cures	0, deaths	6
M. Baudelocque,	15,	0,	15
M. Blandin,	5,	0,	5
M. Brettoneau,	18,	4,	14
M. Gerdy,	6,	4,	2
M. Roux,	4,	0,	4
M. Trousseau,	80,	20,	60
M. Velpeau,	6,	0,	6
	140,	28,	112

Journ. des Connaiss. Méd., June, 1839.

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49. *Cases of Chronic Hydrocephalus successfully treated by Pressure.* By J. F. Barnard, Senior Surgeon to the Walcot Dispensary.—The following cases illustrate the efficacy of a mode of treatment which Mr. Barnard strongly advocates in chronic hydrocephalus. Mr. Barnard informs us, that he was led to adopt this plan of treatment "from observing some adult heads, of such a size as could have been caused by no other than hydrocephalus in infancy." In these cases nature probably had effected a cure by a comparatively early union of the bones of the head, thereby forming a natural and most efficient bandage. Hence, the obvious indication to imitate nature and apply gradual compression to the head.

Case 1.—A child, about a year and a half old, was born to all appearance healthy, and continued so until six months old; when the head was first observed to increase in size. Mr. Barnard did not see it until the disease was so far advanced as to make him almost despair of its terminating favourably. The head was exceedingly large, weighing nearly as much as two-thirds of the rest of the body, and measuring in circumference twenty-two inches and a half. The child lay in a state of stupor, and was unable, in the least degree, to move its head. There was slight strabismus and a rolling of the eyeballs, and almost constant startings of the muscles of the whole body, but more particularly of the face. The countenance had a cadaverous appearance, and the skin was of a yellowish colour; the eyes were sunk in their sockets, and enclosed in a dark ring. The

flesh was flabby and seemingly hanging on the bones; the evacuations from the bowels were particularly unhealthy, sometimes green, sometimes blackish, but never of a healthy colour, nor indeed had they been healthy since half a year after its birth. The tongue was constantly covered with a thick white coat; when its head was moved it screamed, and seemed sensible of pain. The head was directed to be shaved perfectly clean, strips of adhesive plaster, about three quarters of an inch wide, were then applied completely round the head from before backwards, and so that the ends overlapped each other two inches behind, and covering the space from the eyebrows to where the hair commences, and as low down as the ears would permit; then, with cross strips, from one side to the other, over the crown of the head; and, lastly, one long strip, reaching from the forehead within half an inch of the root of the nose over the crown of the head, likewise to the nape of the neck. This gave effectual support to the parietes of the cranium. The whole head was kept constantly covered with linen dipped in cold water, and the child took no other medicine than a little castor oil, when the bowels required it. The good effects of this practice were evident; in less than a week the little patient could move its head much better, the squinting had disappeared, the secretions from the bowels were more healthy, and the startings of the muscles were less frequent, He had not screamed on rolling or moving the head since the bandage was applied. In a fortnight, the size of the head was reduced in circumference three quarters of an inch; the child was more lively, and began to take notice of the persons around it; the secretions from the bowels were perfectly healthy and evacuated regularly; the tongue nearly clean, and the skin of a natural colour; the countenance more composed and animated.

Two months after the bandage was first applied, the child appeared in every respect healthy, but the head was still larger than it ought to be—measuring twenty inches and rather more in circumference; the flesh was firm, and the skin of a healthy mottled hue. The bandage was worn about two months longer, having been renewed about once a fortnight. The bones were then united, and the head firm, and the child well, only requiring time to bring its muscles into action which had been so long quiescent.

Case 2.—J. W., a child, ten months old, who, according to the account received from the parents, was born perfectly healthy, and remained so for a month, when it appeared to fall into a sickly and unhealthy state, as they supposed from dry nursing, the mother being unable to suckle it. Two medical men in succession had been consulted, without advantage, and the head, I was told, had been enlarged for some months. It now measured twenty-one inches in circumference; the fontanelles were quite open and distended, and the bones loose and moveable; the complexion sallow, face bloated, muscles relaxed and flabby; pupils dilated and insensible to light, strabismus, and sometimes convulsions. She lay in a half comatose state, and appeared to be insensible to things passing around her; bowels regular, but excretions unhealthy. Mr. Barnard directed the head to be shaved, and then applied the adhesive plaster in the manner described, omitting the application of cold water.

March 5. In a week the general symptoms were improved, secretions from the bowels healthy, and the squinting gone; head not decreased in size; plasters firm; had taken her food better.

16. Has had no convulsions since second; bowels still continue regular, with only one dose of castor oil; countenance much improved, and complexion clearer; begins to take notice of things passing around her.

April 10. Plasters have begun to loosen; they were, therefore, removed, and fresh applied. The head was found to have decreased half an inch.

From this time the health of the child regularly progressed, and every bad symptom had left her by the end of the month.

May 6. The child has gained flesh, and the muscles become much firmer. Appetite good, and has generally a healthy appearance. The plasters were again renewed, and the circumference found to have decreased an inch. They were again renewed in the beginning of June, and left off the following month,

when the child appeared in perfect health, the head measuring eighten and a half inches.

Case 3. January 15.—Jane Parfitt, a child eight months old, was born with a large head, which has sensibly increased up to the present time. Both the anterior and posterior fontanelles are very open, and the parietes distended; the bones of the skull are thin, moveable, and separated from each other. She is constantly in a recumbent position, from inability to sustain the head upright; pupils dilated, and insensible to light; slight strabismus, occasional convulsions, and great restlessness, sickness, and unnatural secretions from the bowels; appetite good, almost voracious, face pale and emaciated; an inattention to surrounding objects, amounting almost to coma. The head was shaved, and the plaster bandage applied; the circumference of the head is nineteen inches. The compression produced no additional uneasiness, nor any increase of symptoms. Castor oil to be given occasionally, if required.

During the first month there was little apparent alteration in the size of the head, or the state of the patient, excepting that the convulsions were thought to be not so frequent, and the evacuations had a more healthy appearance. The castor oil had only been given twice; strapping quite firm.

March 2. Has had no convulsions for a fortnight; strabismus gone, evacuations natural and regular; head appears to be gradually getting firmer; expression of the face much more pleasant and healthy; sleeps well.

15. The plaster was renewed as it had become corrugated in several places; the long strip, from the forehead to the occiput, was omitted, as from the increased firmness of the head it appeared to be useless. At this renewal the head was found to have decreased in size half an inch.

The case went on well for six weeks, without one untoward symptom. The child has increased in flesh; the evacuations are natural; the convulsions and restlessness have entirely disappeared; the head is much firmer; the fontanelles are smaller, and the sutures are nearly closed.

May 3. Strapping renewed; the head, by measurement, has diminished but little; the child is better able to move it, although the muscles of the neck have not yet sufficient strength to sustain it. Has cut four teeth since the commencement of the treatment.

From this time the little patient gradually improved in health and strength. The plasters were again renewed for the last time about the latter end of July; the child was now able to hold up its head with but little oscillation. In September it appeared in perfect health, with a head rather larger than common (measuring about eighteen inches in circumference,) but quite firm in every part, excepting a small portion of the anterior fontanelle. Mr. Barnard saw the child twelve months after, when it seemed, in every respect, to be well.

Case 4.—At six months old I decided on submitting to the process of compression the head of this child, which measured nineteen and a half inches in circumference. The fontanelles were much opened, and distended with fluid; the bones loose and moveable. The child was perfectly unable to sustain its head, and lay constantly in a recumbent posture; the countenance bloated and indicating distress; pupils dilated and insensible to light; strabismus, restlessness, and occasional convulsions; skin dry and harsh, and urine scanty; bowels rather costive. The head was shaved, and the plasters applied on the first of June.

June 15. There is a marked improvement in the state of the child; he was much quieter, and the strabismus had disappeared; the pupils contracted little on the admission of light; countenance better; plasters firm.

July 2. Have had some trouble in keeping the bowels open with castor oil, but the child in every respect is better, the countenance with rather a comfortable expression; skin soft; and urine passed in a natural quantity. The plasters were renewed, and the head found to be reduced in size full half an inch.

24. The plasters again renewed. The child continues improving; the face has now a natural and pleasant expression, and every symptom of anasarca gone; bowels more regular, and requiring castor oil only about once a week. After

this the plasters were twice renewed, and the patient gradually improved, both in health and strength, until the beginning of October, when he was attacked with measles, which, however, he passed through favourably; and in the beginning of December, appeared to be in perfect healfh, with the head reduced to eighteen inches, and quite firm, except the anterior fontanelle, which was still partially open.

Case 5.—A child, twelve months old, whose head was observed to have been increasing in size for the previous four months, now measured in circumference nineteen inches; the fontanelles and sutures were much open, but the parietes were not particularly distended, although fluid could be distinctly felt; the whole head was loose and flabby, and the bones as it were floating; the countenance shrunk and pallid, and the body generally much emaciated; pupils dilated, and one eyelid dropped, which the patient seemed perfectly unable to lift; slight convulsions occasionally; but usually it lay in a quiet, sleepy state; took its food rather voraciously; the bowels irregular, sometimes loose and sometimes costive but the excretions always unhealthy. It had been attended by three separate medical gentlemen, who had given up the case as hopeless.

The head was shaved, and the adhesive bandage applied on the 10th of March; and, although compression was carried to a much greater extent than I had ventured on in any other case, no untoward symptom followed.

For three months no particular change in the state of the child took place; at this time, June the 10th, although the plasters were still firm, I thought it well, from the growth of the hair and other circumstances, to renew them, which accordingly I did. The bowels were still irregular, requiring occasionally a dose of castor oil, which answered the purpose exceedingly well, and no other medicine was given; the appetite still continued good; the food consisted of bread and milk aud arrow-root.

July 15. The plasters again renewed; no particular change in the state of the patient. The head appeared rather firmer, but no alteration in size; the bowels more regular, and evacuations somewhat improved. Diet ordered to be altered to beef-tea and jellies.

September 5. Both eyelids in perfect action; no convulsions; bowels regular, and evacuations healthy; countenance expressive of ease and comfort; can sit up with little assistance, and appears lively; head much firmer, and reduced in size half an inch; gains flesh.

October 29. The head is firm and the sutures quite closed; the child begins to walk about, as yet rather staggering; plasters left off. The child continued to progress, and in three months was restored to perfect health.

Case. 6.—A child, three months old, was born with rather a large head, which had increased gradually up to this time, and measured seventeen inches. The symptoms were similar to the former cases, with the exception of squinting, and no dropping of the eyelid. The head was shaved, and the plasters applied on the 15th of August. In two months the condition of the child was much improved; the head firmer; no convulsions; bowels regular, and evacuations healthy. The plasters were reapplied twice in the course of the following three months, and no untoward symptom had presented itself. By the end of January, the child appeared perfectly recovered; the sutures had quite closed, and the anterior fontanelle nearly; but, strange to say, the head had not lessened in size from the commencement. It was suckled through the whole course, and seldom required the castor oil.—*Lancet, Oct.* 12, 1839.

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50. *On the Process of Reparation after simple Fracture of Bones.* By Bransby B. Cooper.—Twenty-four hours after fracture of the bones, a large quantity of extravasated blood is found effused into the cellular membrane of the muscles, filling up the spaces between the fractured extremities of the bones, and occupying the openings into the cancellated structure of each fractured extremity. The periosteum in the neighbourhood of the seat of fracture is also infiltrated with blood and thickened; so that a general extravasation of blood, attended

with tumefaction, is all that is to be observed as the immediate result of the injury.

The serous and red colouring matters of the blood now become absorbed, and shortly afterwards inflammatory action commences, which gives rise to the deposition of coagulable lymph. This adheres firmly not only to the periosteum, but also to the coagulum, which has now acquired a considerable increase in firmness, so as to produce a degree of stiffness of the limb which maintains the bone in a state of comparative rest. The effusion of lymph proceeds so as to fill the adjacent cellular membrane, to occupy the space between the separated fractured extremities of the bone, to thicken the periosteum, to fill up the interstices between the muscular fibres, and, in fact, to present so homogeneous a mass as to render it difficult to distinguish the various structures from each other. About this period the fractured extremities of the bones are found softened, granular, with their asperities partly removed, and firmly adhering to the surrounding lymph.

Blood-vessels now begin to be traced through the surrounding lymph, and an apparent anastomosis is established between the nutrient blood-vessels of the bone, those of the periosteum, and of the cellular membrane surrounding the lymph. A greater degree of firmness is also observed in the direction of the blood-vessels. This altered character of the effusion is most remarkable in the space between the fractured bones, where the lymph puts on the appearance of ligamentous bands more than that of cartilage. The whole mass, however, soon hardens and forms what is termed *callus*.

Contraction of the callus, apparently the result of interstitial absorption now commences, and continues till it produces a perfect contact of the overlapping extremities of the bone. A distinct cellular membrane may be observed between the muscles, forming a complete membranous covering to the callus, and continuous with the periosteum of the shaft of each portion of bone to some extent beyond the seat of the fracture.

Between the bones the callus now puts on the appearance of true cartilage, and at the point of contact no appearance of periosteum can be discovered. This interosseous cartilage is next converted into bone. Several red spots or discs are observed scattered irregularly through it, and round each of these osseous matter is deposited, which gradually extends through the whole mass. The extremities of such portions of the shaft as overlap each other, are now found to have lost the compact, and to have assumed a cancellated structure; so that if a longitudinal section be made through the fractured portions, the newly formed bone is found to be continuous with the cancellatud structure of each portion of the fractured bone. The whole medium of union is at this period enclosed in one continuous investing membrane, but no medullary cavity is yet formed.

The bone now grows less vascular, and a modelling process is established, by which the size of the adventitious deposit becomes reduced. The asperities of the bone are rounded off, grooves are formed for the passage of tendons, blood-vessels and nerves; and, finally, the medullary cavity is restored, when the process of reparation may be regarded as completed.—*Ed. Med. and Surg. Jour.* from *Guy's Hospital Reports*, No. VI.

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51. Ricord *on the Use of the Hydriodate of Potass in Syphilis.*—In the more confirmed, or, as M. Ricord has denominated them in his recent work, the *tertiary* forms of constitutional syphilis, no remedy appears to be so uniformly and so potently useful as the hydriodate of potash.

It certainly requires a good deal of practical tact to discriminate those cases to which it is more especially adapted. But, as a general position, it may be confidently asserted that, whenever a patient's system is deeply tainted—as for example, when the bones have become affected, or when it has become broken down or cachectic—this preparation of iodine is by far the safest, and also the most effectual, remedy that we can have recourse to.

The various eruptions, and, we may add, almost every form of cutaneous and mucous disease which are among the more early phenomena of the constitutional

infection, will be found to require, or at least to be much benefited by, the employment of mercury. Even in the treatment of these less severe affections, it is very useful to administer the hydriodate at the same time; as thereby the quantity of mercury necessary for the cure will be greatly diminished. We are not, indeed, of the number of those who attempt to refer all the worst cases of secondary syphilis to the maladministration of mercury; as we have repeatedly seen them occur in patients who had not taken a grain of it. But it cannot, nevertheless, be disputed that the indiscriminate use of this mineral in all the diseases, which are in any way connected with venereal infection, has been productive of the most pernicious results.

In almost every case of syphilitic affections of the periosteum and bone, M. Ricord has of late years renounced the use of mercury, and trusted to the hydriodate; associating it, according to circumstances, with sudorifics, tonics, bitters, &c. Most surgeons will admit that, when a bone has once become carious, the internal administration of mercury is hurtful. Now it is especially in such circumstances that the hydriodate may be given, not only with perfect safety, but with good hopes of decided advantage. Steel and other tonics may be usefully given at the same time; and the local treatment also must be strictly and judiciously attended to.

We could adduce an immense number of cases, not only of ulcerated tubercles, but also of venereal caries of the bones, to illustrate the truth of these remarks: but this would merely occupy a space which we cannot afford at present. The following extracts from M. Rattier's report of M. Ricord's practice embody the most useful hints.

"In our researches on the administration of the ioduret of potassium, we have been able to follow out the treatment of all the various forms of *tertiary* syphilis.

"Often the ioduret alone has been found sufficient for the cure; but, whenever any complication has happened to be present, it has received an appropriate medication.

"By having recourse at one time to tonics and stimulants, at another time to antiphlogistics, M. Ricord combines the various resources of therapeutics, according to the circumstances of each case; and in some patients who, in consequence of successive infections, have exhibited the disease in all its stages—primary, secondary, and tertiary—a local treatment has been directed to the chancres, the use of mercury* has caused the secondary symptoms to disappear, and the hydriodate of potash has been equally successful against the tertiary symptoms.

"Such is the basis of M. Ricord's treatment. If those principles, now explained, be not attended to, the physician will be apt to commit many serious errors; of which we meet with numerous examples in the assertions of those writers who have attempted to disparage the utility of the ioduret of potassium, on the ground that they have observed certain secondary symptoms resist its administration. Had a few mercurial pills been exhibited at the same time, these symptoms would speedily have vanished."

"In conclusion, the proto-ioduret of potassium amply deserves, in the treatment of *tertiary* syphilitic symptoms, all the praise which mercury is entitled to in the treatment of the *secondary* symptoms;—with this difference, that, very seldom or never, has it given rise to those numerous and distressing accidents which are too well known to have been frequently induced by the injudicious administration of its rival."—*Med. Chirurg. Review* and *La Lancette Française.*

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52. *Wound of the Abdomen—Protrusion of the Bowels—Recovery.* A very remarkable case of this is mentioned by Mr. Alcock, in one of his lectures. A lady had stabbed herself in the abdomen, in a fit of jealousy. The surgeon first sent for, had endeavoured in vain, by dilatation and other means, to reduce the gut which protruded through the wound. "On entering the room," says Mr.

* M. Ricord has of late years trusted chiefly to the proto-ioduret of mercury.

A., "I found the patient lying on her back, with a large wet cloth over her person. On removing this I was somewhat startled by seeing the whole of the abdomen covered by the protruded intestines, of a dark red colour, against which the coarse cloth had been some half hour in contact; the patient almost continually vomiting, and at each effort fresh portions of viscera protruding. Our friend, in enlarging the opening, had increased, in a tenfold degree, the mischief; and finding that the woman's convulsive efforts protruded fresh portions upon him, had left her at last, frightened at the quantity exposed to view and his ill success in diminishing it. It appeared that an hour and a half had elapsed since the injury was inflicted. Several feet of intestine were exposed, many parts of a dark and purplish hue. A Portugese surgeon had been called in during the absense of the first, who declared she was a dead woman, and sent for the priest to administer to her soul. The intestines, with some difficulty and careful manipulation, were returned in a few minutes, and chiefly by taking care that, while the forefinger of one hand restored a small portion, the point of the finger was not removed, until by the right hand another portion was pressed down upon it in a similar manner. When all was returned, I passed a strong suture through the muscular parietes, closed the wound, and subsequently a rigorous antiphlogistic treatment was adopted. The woman not only perfectly recovered, but that which is more extraordinary, in five months she was safely delivered, having been four months advanced in pregnancy at the time she wounded herself.

"This is one instance among many which may serve to prove to you that a case, however desperate it may seem to you, should never be given up, and I need scarcely remark that nothing could be more reprehensible than the retreating tactics of the first operator. An operation once begun should always be concluded *secundum artem*—according to the circumstances of the case, however untoward may be the supervening results, or the accidents that may seem to render the operation unavailing. The surgeon will best consult the welfare of his patient, to say nothing of his own reputation, by seeing that the patient, even if death seem inevitable, die, at all events as regards the operation, surgically, if I may so express it. Sometimes he will find, in spite of all prognosis, the patient recovers. I have had a patient lie apparently dead under my own scalpel, and under that appalling circumstance I concluded the operation, and my doing so was the means of saving his life, when all around me had conceived it impossible, and he perfectly recovered.

"I cannot agree with some modern authors in their censure of sutures, and their recommendation, in the generality of cases, to dispense with them; even if the wound of the integuments and peritoneum be only an inch in extent, yet in nine cases out of ten a less suture will be required. It must be remembered that the patient is generally extremely restless; in the first instance most frequently convulsed with vomiting, the abdominal muscles in violent action or writhing with pain; and under these circumstances, how are folds of intestine just returned to be prevented from protruding, if not by a suture? No bandage or pressure can be endured, not even for a few minutes; how, then, is hernia to be prevented? By strips of sticking plaster? assuredly not. After again and again performing the same operation to the manifest injury of the patient—of handling and returning the gut, the surgeon will at last be obliged to resort to the only secure means, which he ought to have adopted at first, and passing a strong ligature through the integuments and part of the muscular parietes, close the wound and effectually confine the elastic contents of the abdomen."—*London Med. Gaz.*, Sept. 1839.

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53. *Penetrating Wounds of the Heart.*—M. Jobert (De Lamballe), in an interesting memoir in the *Archives Générales* for September last, gives an account of his researches relative to these injuries, principally directed to the discovery of a means of diagnosticating them.

The following are his conclusions:—

"1. That penetrating wounds of the heart give rise to a perceptible sound, similar to that heard in varicose aneurism.

"2. That they are accompanied with a *constant convulsive action* of the muscular fibres of the heart.

"3. That the sound just indicated ceases as soon as the wound is closed by a coagulum.

"4. That the convulsive action of the muscular fibres of the heart continue after the formation of the coagulum.

"5. That patients often die from a compression of the heart, and the formation of coagula in the interior of that organ.

"6. That the proper treatment consists, in the first place, of diminishing the mass of blood, even to syncope, with a view of lessening the action of the heart and favouring the formation of a coagulum."

There seems to us, we may remark, some discrepancy between his last two conclusions.

MIDWIFERY.

54. *Delivery of a Fœtus with the Secundines, the Membranes Unbroken.*—Dr. Victor Szokalski, in a communication in *La Lançette Française*, (March 28, 1839,) states that two days previously he had been called to a woman who had been suddenly delivered in the street. On the Doctor's arrival he found the mother seated in a chair. She was a robust woman, about 35 years of age. A glance sufficed to assure him there was no need of anxiety on her account and he directed his attention to *something* which a neighbour held enveloped in her apron; this was an infant, enclosed in its membranes, yet unbroken, motionless and exhibiting no signs of life. It had been born whilst the mother was walking, and had fallen on the pavement. Not being able to tear the membranes, they were so tough, with his fingers, he opened them promptly with a pair of scissors; when about six ounces of liquor amnii flowed out. The infant, a boy, seemed almost, at term, but feeble and emaciated. The umbilical cord was without pulsation; however, some beating of the heart was perceptible. Inspired with hope by this circumstance, Dr. S. cleared promptly the mouth of the infant, and applied frictions with flannel to the chest; he then washed every part of it with warm water, and in a few minutes had the pleasure to see the infant breathe. On the head of the infant, near the anterior margin of the frontal fontanelle, there was a small recent wound, which seemed to attest the fact of the child having fallen on its head, when ushered into the world.

The mother stated that this child was her tenth, and that she had always been delivered with extreme facility. This time she had advanced to the period of eight and a half months, and she attributed her premature delivery to a fall she had had a few days previously in the street. Labour pains had commenced the preceding morning, and as they increased towards evening, she went to the Hotel Dieu, but being refused admittance, she hastened towards the Clinical Hospital of the faculty, and on the way she dropt her burden.

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55. *New test for the detection of Pregnancy.*—Some years ago M. Nauche communicated to the Society of Practical Medicine of Paris, a memoir in which he endeavoured to show that the urine in pregnant women contains a peculiar substance, which separates by repose and forms a pellicle on its surface, and to which he gave the name of *kiesteine*, and that thus a valuable diagnostic sign may be derived by the obstetrical physician. But little importance has hitherto been attached to this alleged discovery of M. Nauche; and we are not aware of any accurate series of experiments which have been instituted with the view of determining the question, till M. Tanchou, of Paris, recently published his researches on the subject in the *Lançette Française*. (February 21, 1839.)

He examined the urine of twenty-five pregnant women, and in every case he detected the presence of *kiesteine.* The following is the description he gives of the changes which the urine during pregnancy exhibits, and of the characters by which its peculiar ingredient may be recognized.

The urine of a pregnant woman, collected in the morning, is usually of a pale yellow colour and slightly milky in appearance; it is not coagulable by heat, or by any of the tests which indicate the presence of albumen. Left to itself and exposed to the air after the first day, there begins to appear suspended in it a cottony-looking cloud, and, at the same time, a flocculent whitish matter is deposited at the bottom of the fluid. These phenomena are not of constant occurrence, and moreover healthy urine sometimes exhibits analogous phenomena.

From the second to the sixth day, we perceive small opaque bodies rise from the bottom to the top of the fluid; these gradually collect together so as to form a layer which covers the surface: this is the *kiesteine.* It is of a whitish or opaline colour, and may be very aptly compared to the layer of greasy matter which covers the surface of fat broth, when it has been allowed to cool. Examined by the microscope, it exhibits the appearance of a gelatinous mass, which has no determinate form. Sometimes small cubical crystals can be perceived in it, when it has become stale.

The *kiesteine* continues in the state we have now described, for three or four days; the urine then becomes muddy, and minute opaque bodies detach themselves from the surface and settle at the bottom of the vessel: the pellicle thus becomes soon destroyed.

The characteristic feature, therefore, of the urine during pregnancy consists in the presence of *kiesteine.* It deserves however to be noticed, that the urine, in some cases of extreme phthisis pulmonalis, and also of vesical catarrh, will be found to exhibit on its surface a layer or stratum which is not unlike to that now described as peculiar to the state of pregnancy. But with proper attention we may easily avoid this mistake. The stratum, in the cases alluded to, does not appear so quickly on the surface of the urine as the *kiesteine* does; and also, instead of disappearing, as it is found to do, in the course of a few days, it (the former) goes on increasing in thickness, and ultimately becomes converted into a mass of mouldiness.

Of twenty-five cases, in which M. Tanchou detected the presence of *kiesteine* in the urine, seventeen occurred in women who were pregnant from four to nine months, four in women who had not quickened, and who considered themselves as labouring under disease of the womb, and the remaining four in patients who had been under treatment for casual complaints—one for sciatica at the Hôtel Dieu, another for ascites in the city, a third for an ulcer in the neck at La Pitié, and the last had been cauterized twice a week for a pretended disease of the uterus. In none of these cases had the existence of pregnancy been suspected, although in every one of them the fact was soon placed beyond doubt.—*Med. Chirurg. Rev.*

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56. *Duration of Pregnancy.*—Dr. Forster, of New York, communicated to the Dublin Obstetrical Society, at their meeting of 7th February, 1839, a case in which the duration of pregnancy was ascertained with accuracy. The patient was the wife of a seaman. Her husband had arrived in Dublin on the 15th of March, 1838, and had left again on the 18th. She was taken in labour on the 26th December, so that the duration of pregnancy was 283 or 285 days. It was a first pregnancy, and the patient had not menstruated since the connection, which took place about a fortnight after the last appearance of the catamenia. There was no reason to suspect deception.

Dr. Nixon mentioned a case he met with about two years ago; it was that of a woman, who, on consulting him with respect to her health, named not only the day, but spoke with confidence of the hour at which her labour would occur. Struck by her apparent conviction that such would be the case, he was led to inquire the grounds of her reasons for thinking so, when she detailed the following particulars:

Her husband, who was a sailor, had been absent for some months; he returned to Dublin on a particular day, and passed that night at home. The following day, while he was assisting in the discharge of the cargo of his vessel, a quarrel ensued between himself and one of the quay porters, whom he struck and killed. The sailor was immediately arrested, thrown into prison, tried and transported. No further intercourse took place between him and his wife, hence she was induced to date the period of her confinement to be nine calendar months from the night of her husband's visit. Dr. Nixon, anxious to learn the result, made subsequent inquiries after the woman, and found that her predictions were very nearly verified, as she took her labour within six hours, and was actually delivered within twelve hours of the period she had foretold.—*Dublin Journal of Medical Science*, July, 1839.

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57. *Yellow Liquor Amnii.*—Dr. Purdon, in a paper read before the Dublin Obstetrical Society, mentioned a case, in which, on rupture of the membranes in a woman affected with jaundice, the liquor amnii exhibited a deep yellow colour.—*Dublin Journal, July*, 1839.

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58. *Extra Uterine Fœtation.*—A remarkable example of this is recorded by Dr. Spaeth, in the *Medicinisches Correspondenz-Blatt*, in which portions of the fœtus were discharged per anum for twenty years afterwards.—*Gaz. Méd. de Paris, March* 23, 1839.

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59. *Five Children at a Birth.*—In our number for February, 1838, page 459, an example of this was recorded; and another is said to have occurred at Naples. The mother, who had previously had twelve children at ten accouchements, was taken with labour pains, at the seventh month of utero-gestation, and brought forth successively, and by natural presentations, five living children, all of whom were baptized. The mother did not suffer any thing extraordinary. Four of these children were females, and one male. The male infant was delivered first, and, after a few minutes, one female; then, after a cessation of fifteen minutes' interval between each, the other three followed. The infants much resembled each other, and were of a regular form, and well grown, and very nearly of the ordinary size of a seven months' fœtus; each weighed about three and a half pounds, and measured in length a French foot. The insertion of the umbilical cord was about four lines lower down than ordinarily. The placentas with their membranes were four instead of five; and each had its proper umbilical cord, except the fourth, which contained two in one large sac. The fœtus, with their membranes, placenta, and umbilical cords, are preserved in the Royal Anatomical Museum of the University of Naples.—*B. & F. Med. Rev., Oct.* 1839, from *Bulletino delle Scienze Mediche*, Aug. and Sept. 1838.

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60. *Case of Spontaneous Evolution.* By Dr. Carganico.—The patient was a robust, healthy primipara, ætat. twenty-eight. The membranes had ruptured with the first pains, and an arm prolapsed. No assistance was requested for two days, when two midwives tried to turn, but did not succeed. The pains were violent, and the author was summoned. He found the patient suffering under incessant and painful uterine contractions, without a moment's cessation. The skin was hot, the pulse small and hard, the patient pale and exhausted. The arm (the left) was immensely swollen, livid and black, and the epidermis peeled off. The labia and vigina were much swollen and were beginning to be dry. The author made an attempt to turn, but could not succeed; he therefore bled her, and used narcotics both inwardly and outwardly, by which means the pains in the loins and abdomen abated; she became quiet and fell into a sound sleep which lasted from five to six hours, during which she perspired freely. Slight contractions of the uterus, and almost without pain, now came on; and by their action, the arm and shoulder were detruded still further, while at the same time the left side of the thorax began to press downwards from the sacrum towards the left arm: the hip followed the side of the trunk, and, as the child

turned completely round, the nates followed, and together with the trunk and legs were now expelled. The head with the arm stretched along it followed without any difficulty, as also did the placenta. The whole process lasted only a few minutes, and the patient assured the author that she had scarcely felt anything of the pain. The child, which was dead, was full grown: it was emphysematous, the epidermis peeling off, and the limbs quite flaccid. It was to this state of perfect flaccidity, the result of incipient decomposition, that the patient was indebted for the perfect ease with which the whole was accomplished.—*B. & F. Med. Rev.* Oct. 1839, from *Med. Zeit. Nos.* 29-34, 1838.

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61. *On the use of the Plug in Placental Presentations.*—Dr. Evony Kennedy mentioned at a recent meeting of the Dublin Obstetrical Society, that he had derived much benefit from the use of the plug in restraining the hæmorrhage during the time we are obliged to await the dilatation of the os tincæ, in those cases in which the edge of the placenta is found to overlap it. He explained the dependence of the hæmorrhage, in these cases, upon the separation of the placenta from the neck of the uterus, and the consequent exposure of the vessel at this stage of the labour, and observed that in order to correct this state, he had been in the habit of carefully introducing a piece of sponge *between the head of the child and the placenta*, thus pressing the latter against the neck of the uterus and closing the mouths of the vessels. This he has allowed to remain, and act as it were the part of a compress, until the head descended into the pelvis, the head, in its progress, adding to the compression, and more completely restraining the discharge of blood. He stated that he had by this means, in several cases, completely restrained the hæmorrhage, and the patients had been delivered of living children without the necessity of turning or other interference. He cautioned the society, in case of their having recourse to this method, of the care necessary to take in getting up the sponge, and bringing it against the amnial surface of the placenta, as, if pressed up between the uterus and placenta, it must separate them still further, and consequently increase the hæmorrhage. Dr. Kennedy further observed, that it was not his wish, in mentioning this plan of practice, to lessen the confidence justly placed in turning in placenta presentations, and stated the necessity which exists, after using the plug, for watching the patient closely, and if the circumstances of mother or child require it, having recourse to turning, or the application of the forceps. He then mentioned two cases which had occurred under his observation, in which the placenta separated from the uterus, and descended before the head of the child. In the one there was a total absence from hæmorrhage, in the other a comparatively trifling loss.—*Dublin Journal*, Sept. 1839.

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62. *Cæsarian Operation.*—M. Hoebeke, surgeon at Sottegem in Eastern Flanders, has performed this frightful operation not fewer than *fifteen* times. An account of eight of these will be found in the February number of the *Bulletin Medical Belge* for 1838. The particulars of the present case are these. A woman, 39 years of age, and mother of three children, had for several years been afflicted with rheumatic pains, which had entirely crippled her and rendered her bed-ridden. After trying a variety of remedies, she took for some time whale oil—to the use of which M. Hoebeke attributes the softening and consequent deformity of the bones. When he saw the woman first, she was in the *sixth* month of pregnancy. On examination he found that the *rami* of the pubis and ischium almost touched each other, and that the interval between the tuberosities of the ossa ischii and the coccyx was so abridged that not more than one finger could be passed.

The correctness of these facts is confirmed by the testimony of Professors Verbeck and Lutens; and these gentlemen concurred in the necessity of performing the Cæsarian operation when labour came on. This took place about three months afterwards, and seems to have been performed under every disadvantage, in a miserable hovel, without any accommodation, and with insufficient assistance. When

the uterine parietes had been divided, M. H. found that he was upon the placenta; he detached it somewhat, and by pushing it aside, he felt the bag of the membranes.

On rupturing these, the uterus contracted and pushed out one of the shoulders of the infant; but the operator quickly got hold of the feet and extracted it without difficulty. Another contraction of the uterus now took place, and expelled into the wound two placentas and the feet of another child! Considerable difficulty was experienced in extracting it, in consequence of the head being detained in the inlet of the pelvis: both children were alive. Having removed as many of the clots from the uterus as he could, and of the blood which had been extravasated into the abdomen, the operator proceeded to unite the wound by a few stitches and strips of adhesive plaster. A small portion of lint was introduced between the lips of the wound at its lower extremity. The operation was performed at about two o'clock in the morning. The subsequent recovery of the patient seems to have been wonderfully fortunate. On the second day after the operation, the infants were applied to the breasts, as the milk had begun to flow freely! During the first week there was a copious discharge of a rather offensive serosity from the wound: the process of cicatrisation went on however so favourably, that, by the end of another fortnight, the patient was pronounced cured.—*Medico-Chirurgical Review*, October, 1839.

MEDICAL JURISPRUDENCE AND TOXICOLOGY.

63. *On Poisoning with Arsenic;* Orfila's *Late Discoveries.*—The subject of poisoning by arsenic, which is so important both in forensic and practical medicine, has just been re-examined and thoroughly solved—at least in its medico-legal relations—in some memoirs communicated to the Royal Academy of Medicine.

For this we are indebted to M. Orfila. No one doubts the immense importance of the medico-legal applications of these new researches; but the same cannot be said of their therapeutic value, for this has been contested.

As we are disinterested witnesses of the discussion, and have conscientiously studied all the details of the question, we shall examine it successively under its two aspects. We must observe, however, that in these new inquiries of M. Orfila, the therapeutic question is subordinate to the medico-legal one. We shall, therefore, touch but slightly on the first; but we shall go at length into the method by which arsenic is detected *to a certainty*, in the bodies of those poisoned by it, and which, by the extension of which it is capable, will effect a fortunate revolution in toxicology, by ensuring the discovery of the greater number of poisons in the bodies of their victims; and this at every period of their crime, however advanced decomposition may have been, and in whatever manner the poison may have entered the living organs. Such, by anticipation, is the general enunciation of the results of these inquiries.

Hitherto, medico-legal examination in cases of poisoning has consisted chiefly in analyzing the matters found in the stomach and intestines after death. Investigation was not pushed any farther.

But it often happens, however little the judicial inquiry may have been delayed, particularly when the dose of the poison has not been very large, that the most careful analysis does not detect the slightest trace of any poisonous substance, although poisoning has really taken place. This is particularly the case with arsenic, the special object of the late investigations, and must be so also with a great number of other poisons.

The cause of the failure is obvious enough; the poison has been removed by absorption from the alimentary canal. Whether the arsenic is swallowed, or applied to any other part of the system, the explanation is the same; unless the dose is very large, it disappears sooner or later, being carried by the absorbents into the depths of the system. This being granted, it is plain that if we confine

ourselves to testing for arsenic according to the established methods, a skilful poisoner may escape the just punishment of his crime; for the jury is rarely satisfied except by the absolute detection of the arsenic.

Now, M. Orfila's method pursues the poison through every tissue of the frame, and detects it in the liver, the lungs, the brain, nay, in the last wrecks of organic matter. Here follows a proof; we select it from many others, first, because it is decisive, and also because it has been the starting point from which all the details of the question have proceeded.

On the 22d of December, 1838, a man died with all the symptoms of poisoning; but these are no more than probable evidence, as many natural diseases may be attended by the same symptoms. The body, therefore, was buried. A fortnight afterwards the public loudly demanded that the circumstances attending this death should be judicially investigated. The body was disinterred, and, on examining the digestive organs, those anatomical lesions were discovered which usually follow poisoning by arsenic. It remained to be seen if chemical analysis would confirm the triple testimony borne by the symptoms of the disease, the organic lesions, and public opinion. Skilful experimenters tested and tested again, according to all the rules of science, but in vain; not an atom of arsenic was detected, and the corpse was again buried.

Meantime, the moral proofs of poisoning became stronger every day. M. Orfila was officially consulted, and, by his advice, the body was again disinterred, in April, about four months after it had been originally buried. The remains of the corpse were sent to Paris to be again examined. It is easy to imagine the state of the internal organs in a subject which had rapidly sunk under its symptoms, even if it did not perish by a violent death; which had been buried and disinterred twice in the space of four months; which had undergone all the minute trials of a judicial inquiry, as well at the hands of the chemists as of the physicians, and which, in conclusion, was exposed to the continual joltings of a post-chaise during a journey of eighty leagues. In fact, the stomach and intestines no longer bore any trace of organic structure, and all the other parts were more or less disfigured. It was to this mass of flesh, almost shapeless, and half decomposed, that M. Orfila had to apply his new method. This memorable experiment was performed in the presence of MM. Devergie and Lesueur, and with their assistance. The result did not disappoint the celebrated forensic physician; he demonstrated the presence of arsenic in the liver and in the limbs of the victim; and it was even detected in the cask which had been used to preserve the remains. Let us now mention in what this method consists, how it is practised, and on what its success depends.

Arsenious acid, when introduced into the stomach, or inclosed in the subcutaneous cellular tissues, is absorbed, and mixing with the blood, enters every organ. When it is finely powdered, and placed on the subcutaneous cellular tissue, only one or two grains are absorbed, whatever may be the quantity used; and this small quantity is sufficient to kill dogs of different sizes. More of it is absorbed when it is introduced into the digestive cavity.

The cases of poisoning which have hitherto occurred in man show that arsenic acts in the same manner that experiment shows it does upon dogs, except that a greater quantity is required to produce death in man. The mode of action of arsenic being thus determined, in reference to the parts to which it is applied, to the passages through which it makes its way, and the quantity which is required for poisoning, M. Orfila meets the question of the extraction of the poisonous substance, in his ordinary way, by experiments and facts. He first shows that it is possible to obtain metallic arsenic from the portion which has been absorbed; and next, that it is indispensable to have recourse to this extraction when the poison has not been found in the alimentary canal, nor in the matters vomited, nor in the other parts to which it may have been applied; for if we confine ourselves, as has been done hitherto, to looking for arsenic in the matters coming from the stomach and intestines, we run the risk of finding none, either because none remains in the digestive tube, or because the matters vomited have been removed; while the metal may always be obtained from the portion

of the arsenious acid which has been absorbed, as facts and experiments continue to show. This poison, adds M. Orfila, may be detected by properly treating a certain number of muscles, or a single viscus, previously dried, particularly if the viscus is very vascular; but it is better to act upon the whole corpse, or at least on half of it, as the quantity of arsenious acid which has been fatal is too small for us to hope to detect it beyond the reach of doubt, if we treat only a single viscus, or an inconsiderable portion of the muscles and bones.

Moreover, arsenious acid can be detected in the blood obtained by bleeding the patient, provided there are several ounces to examine. In this point of view, at any rate, bleeding would be highly useful, by facilitating the inquiries of justice. We shall afterwards say what we think of its utility as a therapeutic agent.

We have just seen, on the one hand, how arsenious acid may be introduced into the system, and on the other, what becomes of it and by what line of proceeding it is to be detected; it remains only to show the method of extracting it. M. Orfila proves by the accumulated results of cases and experiments, that the best method of obtaining the metal consists in boiling the whole body in distilled water for six hours, in precipitating the impregnated fluid with sulphuric acid, then removing the arsenic from the sulphur which is deposited, mixing the decanted and filtered liquid with solid azotate of potass, (nitre,) evaporating the mixture to dryness, and then incinerating the product: this is first to be treated with water, and afterwards with concentrated sulphuric acid, and then to be put into Marsh's apparatus, not in its usual form—for this is inadequate to the purpose—but as modified by M. Orfila. It would be disadvantageous to omit throwing down the precipitate with sulphuric acid, and to mix the liquid at first with the nitrate of potash, because whatever we do, we always lose a portion of the arsenious acid while burning the collected matter with the nitre. The loss will be evidently much smaller if we begin by removing from the fluid all that sulphuric acid can precipitate, and only treat with nitre the liquid which covers the precipitate.

It is proper to add that we lose but little arsenic if we burn the organic matter after having diligently mixed it with the dissolved nitre; while much less is obtained if the mixture of the animal matter and the nitre has been made in a mortar. The loss is still more sensible, if incineration has been performed after Rapp's method.

The body is to be cut into pieces, and may be conveniently boiled in large cast-iron cauldrons, or in copper ones, if the verdigris is carefully removed; and a very clean iron pan, or a Hessian crucible, may be used for the decomposition of the animal matter by the nitre.

In places where, for want of utensils, the examiners do not undertake all these investigations, it will always be possible, and, indeed, is indispensable, to boil the body in a large cast-iron or copper cauldron, for six hours, with distilled water and ten or twelve grains of solid potash prepared by alcohol; and then evaporate the fluid to dryness, after having passed it through fine linen, while still luke-warm. The solid product may afterwards be conveniently submitted to the necessary tests. Lastly, the presence of arsenious acid in a human body with which it has not been placed in contact, provided its existence has been demonstrated by boiling the corpse cut into pieces, in distilled water, for six hours, without the addition of an acid, incontestibly proves that the poison has been taken during life; for numerous experiments have shown that the bodies of those who have not been poisoned with arsenic, when treated in the same manner, furnish no trace of it.

The chief object of the investigations which we have just analysed is to detect the presence of arsenic, either during the illness of the patient, or after his death; and we are compelled to conclude that M. Orfila's new method of investigation, joined to his improvements of the old ones, makes it impossible henceforth to miss the tangible proof of arsenical poisoning; so that those who have committed such a crime can never again escape the vengeance of the law.

But there is another duty, of which the medical jurist must not lose sight; it

consists in preventing the judges from committing an irreparable error by showing beyond all doubt, that the poisonous substance discovered in the living or dead body has been really introduced by a criminal hand, and that it can neither have been naturally produced in the human frame, nor artificially developed by the action or reaction of the numerous agents employed in testing.

M. Orfila has not overlooked the importance of this task. He first inquired whether the human body contained arsenic among its chemical principles; under what form it appeared; and whether it was possible to distinguish it from arsenic introduced from without. These points having been cleared up, he examined the conditions of the purity of the tests used, and fixed rules by which we may be assured that the arsenic obtained is neither derived from the reagent, nor the vessel, nor from the earth where the corpse may have been long deposited.

M. Orfila has ascertained the existence of an arsenical compound in the human body. This compound, which he believes to be arseniate of lime, is found in a small proportion in the bones, and perhaps in other tissues. This important fact might make one fear that the occurrence of a natural salt of arsenic would affect the results of our analysis, and thus condemn us to a lamentable state of doubt as to the perpetration of the crime. It is fortunate, however, that the experiments of our great medical jurist have cleared up this fearful dilemma; for they have proved that the natural arsenical compound is not soluble in boiling distilled water kept neutral; while, on the contrary, poison introduced into the system is dissolved and consequently disengaged by this menstruum. The reagents employed in these inquiries are the sulphuric and azotic (nitric) acids, potash prepared by alcohol, azotate of potash, (nitre,) water, iron, and zinc. M. Orfila shows that the sulphuric acid of commerce sometimes contains arsenic in the state of arsenious and of arsenical acid, which might lead to error; but he also teaches the means of purifying it. The same may be said of nitric acid, if it has not been distilled over nitrate of silver. The potash used in these examinations never contains any; the iron and zinc may contain some, but it is easy to test them beforehand, and free them from it.

The instruments used in these investigations are cast-iron boilers, porcelain capsules, Hessian crucibles, flasks, and test tubes. The boilers will never yield any arsenic to the fluid that they contain, provided it is kept neutral by the addition of potash prepared with alcohol. The porcelain capsules, the flasks, and the tubes never yield arsenic; but it is necessary to rinse them with an alkaline solution when they have contained arsenical substances.

Lastly, some earths contain arsenic, and may thus make medico-legal examinations more complicated. However it is easy to test them, and to distinguish the particles of arsenic which they afford from those furnished by the body.

To sum up: the important inquiries of which we have given a short abstract, authorize us to conclude that poisoning by arsenious acid will in future be recognized under all circumstances; and that it will be ascertained without the chance of being confounded either with the presence of arsenical salts naturally existing in the human body, or with the accidental occurrence of arsenical compounds in the tests or instruments used, or in the soil where the body has been buried. In other words, in the memoirs that we have just analyzed, poisoning by arsenious acid is examined under every aspect, and illustrated by such an apparatus of cases and experiments that the irresistible authority of the best demonstrated truths is stamped on the method of which a particular application is described.

To complete this analysis we will add a few words on the employment of venesection in the treatment of poisoning by arsenic. In the first place, is bleeding indicated? It is not long since antiphlogistics were thought to be universally indicated; while, at present, another extreme prevails, and they are rejected almost every where. This is so much the case, that after having formerly combated the absurdity of treating every disease by this method alone, we have now frequently to contend in favour of these powerful agents. Arsenical poisoning is a striking instance in point, yet discrimination is necessary in this as in every other case. If it is meant that in this kind of poisoning bleeding is indicated

in every patient, in all circumstances, and in all the phases of its course, the answer is obvious; but no one, we believe, goes so far as this. On the other hand, if any one denies that bleeding is a means of lessening the consequences of this poison, and asserts that it necessarily hastens the catastrophe, and that we ought instead to use stimulants at every stage of the case, he commits a palpable error, which is every moment refuted by facts.

The length to which this article has extended does not allow us to enter into the details of the treatment, which too often is useless.

Before we discuss the different points of this important question, we shall wait till the new experiments projected by the committee of the Academy have thrown some light on the difficulties by which it is still surrounded.—*Gazette Médicale de Paris*, 17 Aug. 1839.

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64. *On the effects which result from the introduction of Pins into the Digestive Organs.* By. M. Ollivier d'Angers.—Rose Melanie Selter was tried at the Court of Assizes for the attempted homicide of a child two months and a half old, by forcing it to swallow pins. After the pins had been swallowed, the child was seized with fits of suffocation so severe as to cause serious alarm for its life. This was on the 7th of April; and for several successive days it manifested considerable uneasiness, and appeared to have some obstacle in its throat, which prevented it swallowing freely. However, on the 10th April, the pains ceased, and the infant began to recover its health. The cause of its sufferings was not known at this time; but on the morning of the 11th April three pins were passed by stool; and on the evening of the same day four others; and next morning two more, making in all nine pins. After this the child recovered its health, and did not appear to have been injured by the pins passing through it.

M. Ollivier was led, from being consulted in this case, to examine into the published cases where needles or pins had been swallowed, with the view of ascertaining the amount of danger likely to result from the introduction of such bodies into the digestive organs. We shall notice shortly the result of his inquiries.

Numerous cases are on record where needles and pins have been swallowed, from which it appears that, in many instances, they cause no appreciable inconvenience or injury, but, in other instances, give rise to symptoms more or less alarming—depending on whether the pin has penetrated the coats of the pharynx or œsophagus, or transfixed the cartilages of the larynx or trachea, or the coats of the stomach. A pin may remain fixed in the coats of the stomach without its presence causing much uneasiness. M. Ollivier saw a pin bent on itself, traversing a fold of the mucous membrane of the stomach, in the body of a patient who had fallen a victim to the operation of lithotomy. In this case there was only slight thickening, with induration of the coats where they were pierced by the pin. Another case is related where a brass pin, about fifteen or sixteen lines in length, merely caused slight uneasiness in the part supposed to be occupied by that body, so long as it remained in the intestines; but all unpleasant symptoms disappeared when the pin was expelled.

In certain cases the needles and pins which have been swallowed make their appearance under the skin, in different regions of the body, giving rise to the formation of small abscesses, on opening which the pins or needles may be extracted. Cases of this kind are on record, where hundreds of pins have been swallowed, and yet have not caused death, the patients having died of other diseases. Dr. Silvy, (Mem. de la Soc. Med. d'Emulation, Vol. v. p. 181,) in a maniacal case which he attended, made out the existence of 1400 pins in various parts of the muscles of the body and limbs, many of which he extracted during life. This person died of *phthisis pulmonalis*. A very singular circumstance was, that none were found in the lungs. A case is also mentioned, which occurred under the care of Dr. Villars, (Dict. des Sciences Medicales, Tom. vii. p. 66,) where more than 800 needles and pins were extracted from the various parts of the body. The patient was a young girl, who for twelve days was in a state of delirium, during which time she had swallowed these needles and

pins. They appeared over the whole surface of the trunk and of the limbs, and were successively extracted. She recovered.

These bodies are not, however, always thus harmless when introduced into the body; for cases are recorded where serious diseases, and even death, have been produced by them. Arnaud and Saviard (Journal de Savans, Nov. 1791,) found large pins in the testicle; they had found their way into this organ, and caused in it the development of carcinomatous degeneration. Schenck, (Obs. Med. Chir. lib. 3, Obs. 10,) relates a case where a needle which was swallowed pierced the coats of the stomach and the liver, and caused death. Bayle (Nouvelles de la Republique des Lettres, Jan. 1795, Art. 5,) relates the case of a man who complained, for a long period of an acute pain in the hypogastric region, where a collection of purulent matter formed. On the abscess being opened, a very large quantity of fetid purulent matter escaped, and the discharge continued for months. At last the patient died, worn out by the excessive discharge; and it was found, on dissection, that the abscess extended to the ureter; the coats of this tube were ulcerated, and a pin was found transfixing the thickness of all the coats. Dupuytren, (Traité des Blessures par armes de guerre, Tom. i. p. 82,) gives the case of a maniacal woman, who fell a victim to the numerous abscesses which formed over the surface of all the body, and in all of which needles or pins which she had swallowed, were found. M. Guersant has also related to the author a case, where a fatal result followed the swallowing of a needle. A child was seized with vomiting, which continued obstinately for several weeks, and, from the symptoms which accompanied it, it was feared that softening of the stomach had taken place. The child died after two months of constant suffering; and, on dissection, a needle was found at a little distance from the pylorus, traversing the coats of the stomach, and fixed pretty deeply in the substance of the liver. No inflammation existed round this foreign body, which had evidently been the cause of the sufferings and death of the child.

M. Ollivier in conclusion remarks, that these last cases are very rare, yet they are sufficient to prove that death sometimes results from the introduction of these bodies into the digestive organs, though such a result is to be looked on as the exception, not the general rule.—*Edinburgh Med. and Surg. Jour.* from *Annales d'Hygiene Publique*, Jan. 1839.

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65. *On some New Signs of Suspension having taken place during Life.*—In a memoir presented to the Academy of Medicine, M. Devergie notices two circumstances which, in cases of hanging, will prove whether suspension has taken place during life or not. The facts of an ejaculation of sperm in the last moments of life, in cases of hanging, and of the existence of spermatic animalcules in urine, when an emission of urine has immediately followed an ejaculation, are well known, and have led M. Devergie to search for these animalcules in the urethra of persons who have been found hanging. If in such cases the urethra be slit open, or, better still, if its contents be pressed out into a watch-glass, we find a mucous matter, more or less thick, exhaling a strong odour of semen, and containing here and there the peculiar animalcules which are found in the human spermatic fluid alone. But the place of these is occasionally supplied by a number of small rounded bodies resembling the animalcules without a tail; these M. Devergie conjectures may be spermatic animalcules in an imperfect or rudimentary state. However that may be, the presence of semen in the canal of the urethra is a certain sign that suspension took place during life. The second circumstance is that the end of the penis is so reddened and moistened by a mixture of semen and mucus, as to give the idea of a gonorrhœa having existed; whilst the *corpus cavernosum* and *spongiosum* are so filled with thick black blood as to form a striking contrast to the paleness of the same parts in cases of natural death. This sign is of as much value as the existence of sperm in the urethra, and is observed with greater facility.—*British and Foreign Medical Review*, from *Bulletin de l'Académie*, November 20, 1838.

MEDICAL STATISTICS.

66. *Vital Statistics of Paris.*—The total number of births in Paris, during the year 1837, was 29,192; or, 14,651 boys and 14,541 girls. Of the number born, no less than 9,578, or nearly one-third, were born out of wedlock. The number of deaths amounted to 28,834. There died—at home, 17,127 persons; in hospital, 10,604; in prison, 99; while 304 bodies were deposited at the Morgue.

Hence of every *five* persons who die in Paris, only *three* have the satisfaction of dying in bed.

The number of deaths from small-pox, out of a population of 774,338, amounted to 458; in the year 1836, it was only 227.

The proportion of males to females born is as 17 to 16; but of children born out of wedlock, the proportion is as 24 to 23.

As there is one birth for every 32.7 inhabitants, if we suppose the population to remain nearly stationary, the mean duration of life is expressed by 32.7 years. Before the revolution, it was only 28.75.—*Lancet, Oct.* 5, 1839, from *La Lancette Française, Sept.* 10, 1839.

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67. *Prison Mortality in France.*—From 1815 to 1818, the general mortality of the prisons in Paris was one death for every 12.01 prisoners, from 1819 to 1825, the mortality was reduced to one in 15.30. In the other prisons of the kingdom the general mortality was one in 20.9.

In the places where galley slaves are confined, the mortality from 1816 to 1827, was as follows:

Rochefort, - - - - - - - - - -	1 in 11.51.
Toulon, - - - - - - - - - -	1 in 20.55.
Brest, - - - - - - - - - -	1 in 26.06.

Ibid. Sept. 21, 1839.

MISCELLANEOUS.

68. *Means of rendering Respirable an Atmosphere containing a portion of Carbonic Acid.*—Professor Graham communicated to the chemical section of the British Association, at their late meeting, an extremely important practical suggestion, one which may tend to the preservation of many lives.

He observed that the *after damp*, or carbonic acid, left in the atmosphere of a mine, after explosion, is supposed to occasion, in many instances, a greater loss of life than the explosion; at the same time it renders assistance impracticable. In many cases the oxygen of the air is not exhausted by the explosion, although, from the presence of five or ten per cent. of carbonic acid it is rendered irrespirable. The atmosphere will be rendered respirable by withdrawing the carbonic acid, and he suggested a method by which this might be effected. He found that a *mixture of slacked lime and powdered glauber's salts, in equal proportions*, has a singular avidity for carbonic acid, and that air might be purified completely from that deleterious gas, and thus rendered respirable by *inhaling it through a cushion of not more than an inch in thickness, filled with that mixture*, which could be done without difficulty. This lime-filter should be used in all cases where persons are obliged to descend into mines, vaults, wells, &c., the atmosphere of which is noxious to life from the presence of carbonic acid.

AMERICAN INTELLIGENCE.

Case in which a thimble was impacted in the right posterior naris. By Paul F. Eve, M. D., Professor of Surgery in the Medical College of Georgia.—A little girl, ætat. about six years, was brought from a neighbouring state by her father, Mr. S., who stated that she had had a thimble up her nose for the past two weeks. In playing with her mother's thimble, she had put it into her mouth, and was observed suddenly to be threatened with suffocation. Her father being present, thrust in his finger, and in the agitation of the moment, the efforts to extract it pushed it into the posterior part of the right nostril. As it was not removed by the attempts which were immediately made, she was brought to our city for professional assistance.

By the introduction of Bellocque's instrument, the foreign body was readily felt in the right nostril. As this passed the thimble and appeared along side the uvula, I next tried to dislodge it with a large sized flexible metallic bougie. When touched by these instruments, a few drops of muco-purulent matter flowed out of the nose. Finding it impossible to succeed by these means, I abandoned them, and resorted to the finger in the posterior naris.

My patient was very ungovernable, but her mouth was forced open, and maintained so by a cork between the molar teeth. As the thimble was on the right side, I succeeded with the left index finger, although I found it so closely impacted into the naris, that the nail of the finger was split in the efforts at extraction. It may have been that the instruments which were introduced through the anterior nostril passed through the thimble, as it is what is called the tailor's, having an open base.

Report of the Obstetric Department of the Philadelphia Dispensary, for the year 1839. By Joseph Warrington, M. D., Accoucheur.—Seventy-seven women have been under the care of the accoucheur in this institution during the year.

Seventy-nine children have been delivered, viz. fifty-three boys and twenty-six girls; one woman having twin boys, and one twin girls.

In forty-seven cases in which the presentations and positions of the fœtuses were carefully observed, they were as follows:—28 in first position of vertex; 11 in second do.; 4 in fourth do.; 3 in first position of breach; 1 in fourth position of knees.

The average duration of labour, in 45 cases, was 11 hours 26 minutes, the extremes being 30 minutes and 31 hours.

The average time required for the spontaneous expulsion of the placenta, in 51 cases, was 19 minutes, the extremes being 5 and 60 minutes. In six other cases some manual aid was necessary to the delivery of this mass, after a retention for 30, 60, 90, 90, 120, and 240 minutes respectively. In each of these cases the delay of its delivery depended upon either atony

of the uterus, or the manner in which the placenta presented at its orifice, and *not to adhesions or hour-glass contraction.*

The insinuation of the finger in four of the cases, and of the hand into the vagina and os uteri in two, was found sufficient for the completion of delivery.

In one case the fœtus presented originally in the fourth, but became spontaneously changed to the second position of the vertex.

In one case flexion of the head upon the thorax did not take place until the hand was introduced to assist the change.

The forceps were applied in four cases, viz., in one which one year and fifteen days previously had been delivered by the crochet, in consequence of deficient amplitude of the pelvis (child now delivered alive); one in consequence of contraction of the antero-posterior diameter, with the additional obstacle of the jutting in of the left acetabulum (child living), case given in detail by William H. Muller (one of the obstetric class); in one in consequence of an irreducible prolapsus of the cord (child not quite dead when delivered, but could not be resuscitated); and in a fourth case, in consequence of the defect of uterine action and a small but well-formed pelvis, ergot having failed to effect delivery (child living). Ergot was used in this one case only, during the whole year. All the women recovered except one, who died of phthisis, eight days after delivery, which occurred three weeks before term, the patient not being expected to live till that time. Delivery was effected by the uterine efforts merely, and almost unconsciously to the emaciated and enfeebled mother.

Two patients had metritis coming on after natural and easy labours, and one (the case of which will be given with some detail) after considerable manipulations and use of the forceps. These were cured in a few days by blood-letting, general and local, moderate purging, fomentations to the abdomen, and mucilaginous injections into the vagina.

There was one case of severe uterine and mammary engorgement, occurring on the third day after a natural labour. It was promptly cured by two doses of calomel and castor oil, with the frequent use of fomentations to the mammæ and abdomen.

One patient suffered much from ovaritis during the latter part of gestation. She was greatly relieved by cupping before delivery and a free leeching subsequently.

In one case, in which there was slight hemorrhage at the time of delivery, the placenta was found to be studded with numerous calcareous deposites upon its uterine surface. Several other placentæ were remarked to contain this species of formation, but no peculiar condition of the patient or child was noticed in connection with the circumstance.

Four or five of the children had ophthalmia; all of them recovered except one, which died in convulsions eight days after its birth; the inflammation was intense, and no nurse could be obtained to attend upon the mother or apply the remedies proposed for the relief of the child.

Dr. Warrington holds the appointment of accoucheur to this ancient and extensive institution, with a view to establish a school of practical midwifery. The cases are distributed among those members of his class who attend upon his course of practical instructions in obstetrics, after having attended a full course of anatomy and midwifery in some respectable medical school.

Twenty-five gentlemen have participated in his courses of instruction

at the Dispensary, and attended upon the above list of cases during the past year.

The number of patients for 1839 exceeded that for the previous year by twenty-four.

Raw Cotton a Cure for Chafes.—Dr. A. Robertson, of Gainesville, Alabama, writes to us that he has found raw cotton a prompt and effectual cure for chafes. Practitioners, he states, in a southern climate, who visit their patients on horseback, are peculiarly liable, especially in sultry weather, to being badly chafed. Having suffered much from it himself, being sometimes disqualified for a day or two at a time for riding, he was induced to try the raw cotton, and has always found that when it was applied to the skin at night on going to bed, it afforded entire relief by next morning.

National Medical Convention.—The National Medical Convention for the revision of the Pharmacopœia of the United States, assembled in the City Hall, Washington, on the 1st of January, 1840.

The following delegates represented their respective Medical Societies and Colleges in the Convention, viz:

Theophilus C. Dunn, M. D., Rhode Island Medical Society.

Lewis Condict, M. D., New Jersey Medical Society.

Franklin Bache, M. D., Henry Bond, M. D., Joseph Carson, M. D., College of Physicians of Philadelphia.

George B. Wood, M. D., University of Pennsylvania.

Robley Dunglison, M. D., Jefferson Medical College, Philadelphia.

William W. Morris, M. D., James Couper, M. D., Delaware Medical Society.

John R. W. Dunbar, M. D., John C. S. Monken, M. D., Edward Foreman, M. D., Washington University, Baltimore.

Joshua J. Cohen, M. D., Medical and Chirurgical Faculty of Maryland.

Thomas Sewell, M. D., N. W. Worthington, M. D., Medical Society of the District of Columbia.

Thomas Miller, M. D., Harvey Lindsly, M. D., John M. Thomas, M. D., Columbian Medical College.

John W. Davis, M. D., Vincennes Medical Society of Indiana.

William Bacon Stevens, M. D., Georgia Medical Society.

The credentials of the delegations from the White Mountains Medical Society of Vermont, from the Medical Society of New Hampshire, from the Albany Medical College, and from the College of Physicians and Surgeons of Lexington, Kentucky, were presented by Dr. Condict, the President of the Convention of 1830, but the delegates were prevented from attending. After the rising of the Convention, however, Josiah Bartlett, M. D., delegate from the New Hamshire Medical Society, and Samuel G. Baker, M. D., and William A. Aikin, M. D., delegates from the University of Maryland, reached Washington, and by public notice in the papers stated their full concurrence in the measures adopted by the Convention.

The Convention elected Lewis Condict, M. D., of New Jersey, President, George B. Wood, M. D., of Philadelphia, Vice President, N. W. Worthington, M. D., of Georgetown, District of Columbia, Secretary, and Harvey Lindsly, M. D., of Washington, Assistant Secretary.

With the view of giving the various medical interests of the country their due weight in the deliberations of the Convention, the Surgeon General of the Army, and the Senior Naval Surgeon, at Washington, were invited to participate in the proceedings.

After some other preliminary business, the Convention adopted the following resolution, offered by Dr. Bache:

Resolved—That the delegates from the different medical bodies represented in this convention, be requested to present any written communications with which they may have been charged.

Upon calling over the several delegations, it appeared that no written communications had been forwarded to the Convention, except by the College of Physicians of Philadelphia. Dr. Bache presented from this College several documents, which, he stated, had been prepared with great industry and care, with a view to facilitate the revision and emendation of the Pharmacopœia of of 1830. This communication elicited discussion; but with a view to more definite action, Dr. Lindsly proposed the following resolution, which was adopted:

Resolved—That the communication from the College of Physicians of Philadelphia be referred to a committee who shall, also, be instructed to report a plan by which the revision and publication of the Pharmacopœia may be carried into effect.

It was ordered that the committee consist of five members to be named by the President, and Drs. Bache, Davis, Stevens, Cohen and Dunn, were accordingly appointed.

Dr. Wood offered the following proposition, which was adopted:

Resolved—That a committee be appointed to report a plan for the organization of the next Convention for revising the Pharmacopœia.

It was ordered, that the committee consist of three members to be named by the President, and Drs. Wood, Sewall and Dunglison were appointed.

The committee to whom the documents from the College of Physicians of Philadelphia were referred, and whose duty it was to arrange a plan by which the revision and publication of the Pharmacopœia might be carried into effect, made the following report, which, with the accompanying resolutions, was adopted by the convention:

"The Committee are of opinion, that the labours of revision constituting the communication from the College of Physicians would form a proper basis for the new Pharmacopœia; and that this communication, and all others that shall be received from bodies which have appointed delegates to this convention, should be referred to a committee of revision and publication, to meet in Philadelphia as soon as practicable. As it is desirable, that the committee here proposed should have the assistance of pharmaceutical bodies, it is recommended that authority be given to it to request the co-operation of Colleges of Pharmacy in the United States. A revising committee thus constituted, and clothed with power to fill their own vacancies, to publish the work after the completion of the revision, and to take order on all incidental measures necessary to carry out the object of the Convention, would, in the opinion of this committee, form a body to which the revision and publication of the Pharmacopœia might be safely trusted. To carry out these views the committee would recommend the adoption of the following resolutions by the Convention:

"1. The communication from the College of Physicians of Philadelphia, and all other communications which may be received from bodies that have appointed delegates to this Convention, shall be referred to a committee of revision and publication consisting of seven members, three of whom shall form a quorum.

"2. The committee, thus constituted, shall meet in Philadelphia, and be convened, as soon as practicable, by its chairman.

"3. The committee shall be authorised to request the co-operation of the Colleges of Pharmacy in the United States; to publish the work after the completion of the revision, and to take all other measures which they may deem necessary to carry into effect the object of the Convention.

"4. The committee shall have power to fill its own vacancies.

"5. When the committee shall have terminated their labours, they shall prepare a report of their proceedings and transmit it to the Secretary of this Convention, to be laid before the next Convention. All which is respectfully submitted.

"Franklin Bache,
"John W. Davis,
"W. Bacon Stevens,
"Joshua I. Cohen,
"Theophilus C. Dunn,
Committee.

"*Washington, January 3d*, 1840."

The Convention then proceeded to choose the members of the committee of revision and publication proposed in the above report, and Drs. Wood, Bache, Dunglison, Cohen, Dunn, Stevens and Sewall, were appointed.

The committee whose duty it was to arrange a plan for the organization of the next Convention, for revising the Pharmacopœia, made a report, which, at the suggestion of Dr. Stevens, was amended so as to make the first Monday in May, 1850, the time for the meeting of the Convention, instead of the first Monday in January, 1850. The report thus amended, and modified in other respects to suit this change, was adopted by the Convention as follows:

The committee appointed to suggest a plan for organizing the next Convention, report, that they have taken the subject into consideration, and ask leave to submit the following resolutions, which, with a few modifications, are the same as those adopted in 1830, for the organization of the present Convention.

1. The President of this Convention shall, on the 1st day of May, 1849, issue a notice requesting the several incorporated state Medical Societies, the incorporated Medical Colleges, the incorporated Colleges of Physicians and Surgeons, and the incorporated Colleges of Pharmacy, throughout the United States, to elect a number of delegates, not exceeding three, to attend a general Convention to be held at Washington on the first Monday in May, 1850.

2. The several incorporated bodies thus addressed shall also be requested by the President to submit the Pharmacopœia to a careful revision, and to transmit the result of their labours through their delegates, or through any other channel, to the next Convention.

3. The several medical and pharmaceutical bodies shall be further requested, to transmit to the President of this Convention the names and residences of their respective delegates, so soon as they shall have been appointed; a list of whom shall be published under his authority, for the information of the medical public, in the newspapers and Medical Journals, in the month of February or March, 1850.

4. In the event of the death, resignation or inability to act, of the President of the Convention, these duties shall devolve upon the Vice President, and should the Vice President, also, be prevented from serving, upon the Secretary, or the Assistant Secretary, the latter acting in the event of the inability of the former.

GEORGE B. WOOD,
THOMAS SEWALL,
ROBLEY DUNGLISON,
Committee.

Washington, January 3, 1840.

The following resolutions were offered by Dr. Wood and adopted by the Convention:

Resolved—1. That the Secretary take charge of and preserve the existing records until his successor shall be appointed by the Convention of 1850, when it shall be his duty to hand them over to such successor.

2. That in case of the death, resignation or inability to act, of the Secretary, his duties shall devolve upon the Assistant Secretary; and 3. That it be recommended to future Conventions to appoint their Secretary, or Secretaries from members residing in the District of Columbia.

Dr. Bond offered the following resolution, which was adopted:

Resolved—That the committee of revision and publication be requested to take such measures as they may deem most effective to induce Physicians and Apothecaries to adopt the nomenclature of the Pharmacopœia in their prescriptions and labels.

Dr. Dunglison offered the following resolution:

Resolved—That the officers of this Convention be requested to prepare forthwith, for publication, such part of the transactions of the Convention as may seem to them to be adapted for making extensively known its important objects and proceedings, and that they be authorised to publish the same in the various Medical Journals of the United States, and in such of the daily and other newspapers as they think proper.

This resolution was adopted, and it was made the duty of the Secretary and Assistant Secretary to carry it into effect.

Having transacted business of great interest to the medical profession of their country—having passed votes of thanks to the officers of the Convention "for the able and dignified manner in which they had discharged their respective duties," and to the Board of Aldermen, of Washington, for the use of their Hall, the Convention, after a session of three days, characterised by a spirit of generous cordiality, which must contribute greatly to secure the objects for which they met together, adjourned.

By order N. W. Worthinoton, *Secretary.*
Harvey Lindsly, *Assistant Secretary.*

P. S. The Medical Journals throughout the United States are respectfully requested to copy the foregoing abstract of the proceedings of the Convention.

Medical Topography of the city of Galveston, Texas, with an account of the Symptoms and Pathology of the Yellow Fever, which prevailed in that city in the autumn of 1839. By Ashbel Smith, M. D., Ex-Surgeon-General of the Texian Army.—Galveston Island, forming a part of the coast of Texas, is about thirty miles long, and of an average breadth of four or five miles. It is but little elevated above the surrounding water, quite level, destitute of trees, and presents altogether the general appearance of a prairie. The soil is light, porous, of a darkish gray colour, with a large admixture of sand as you approach the margin of the Island, and every where covered with a luxuriant grass. Water of rather indifferent quality, but just admissible for culinary uses, may be obtained by digging a few feet in any part of the island.

The city of Galveston is situated near the eastern extremity of the island, in latitude 29 deg. 18' N. and longitude 96 deg. 6' W. from Greenwich. The town site as laid out, extends quite across the island, which here varies from a mile and a quarter to two miles in breadth. The city is thus washed on its southeastern border by the Gulf of Mexico—while its opposite side which has a northwestern aspect, is washed by Galveston Bay, a broad sheet of water extending about forty miles into the country. A gentle curvature of the island on the bay side, Pelican Island, a long, level tract of land of about one thousand acres, situated at two miles distance north of the city, and the peninsula terminating in Bolivar Point to the north east, form the harbour. The heaving of the tide has formed a natural levee along the shore of the harbour, of about two feet in height and one hundred feet in breadth. Immediately in the rear of this levee, the land is low, being nearly on a level with the water at middle tide, and overflowed with water at high tides. Further in the rear, the land is again elevated and consists of a firm, dry, porous soil. From the overflow of the tides and from occasional rains, there exists at all times, between the levee and the elevated land in the rear, either a quagmire or a sheet of shallow water, three fourths of a mile long, and varying from one hundred to three hundred feet in breadth, exposed to the rays of an ardent sun. In front of this portion of the city, the shipping, from twenty-five to fifty craft, ride at anchor. Along the levee and immediately contiguous to the morass, runs the Strand, the principal business street of the city.—Nearly all the stores and buildings on one side of the Strand, are erected in or over the morass, without its having been filled up at all, or but very inadequately. In addition to the mud and moisture suffered to remain beneath, and in the rear of these buildings, the filth which business and population engender, has been permitted to accumulate. The rest of the city, with this single exception, from the porous nature of the soil, is dry and presents an aspect of general neatness, comfort and cleanliness, rarely to be seen in any part of the world.

The city of Galveston is yet scarcely two years old, and is estimated already to contain from two thousand to twenty-five hundred souls. The houses are framed buildings, most of them painted white, and in their external appearance, resembling the neatest houses of this sort in the small towns of the Eastern States.

For general healthfulness, Galveston Island, including the city, is probably unsurpassed by any place in the world. We are here exempt from the typhus fevers of cold climates, and the malignant endemics of the miasmatic regions of the south. The few diseases that occur here, are for the most part of a moderately inflammatory character, and readily yield to the simplest treatment. The mild breezes that are wafted over us, bear no unseen deadly poison on their wings. When the south wind prevails, the transparent clearness of the skies and balmy softness of the atmosphere, realize all that poets have sung of the Ægean. The winds from the east and north east are more harsh, and when they blow for a considerable period produce an inelastic state of the atmosphere, and dispose to agues. The brisk northers, coming from a point west of north, depress the mercury in the thermometer lower than easterly winds, but are justly regarded as less prejudicial to health. The range of the thermometer in this climate is high during the warm season, but the bland breezes from the south, which prevail very constantly throughout this period, and are usually strongest at midday, render the heat very seldom oppressive. They produce an elastic state of the atmosphere; the nights are cool, and a large portion of the citizens wear cloth the whole year. During the summer months, northers are of rare occurrence; they generally commence blowing moderately early in October. Frost commonly makes its appearance between the 1st and 10th of November.

Galveston continued in the enjoyment of its general healthfulness the present season, furnishing very few cases of severe disease, and these were mostly contracted elsewhere, until the latter part of September. About this time a Mr. Tichenor, keeping a retail store on the Strand, died rather suddenly with well defined symptoms, as was reported, of yellow fever. This report, however, did not attract much attention. Two or three days afterwards I was called to see a Mr. Lang, in the ten pin alley on the Strand, opposite Mr. Tichenor's, presenting the prominent symptoms of the same disease. In the progress of this case blood oozed freely from the patient's gums for sixty hours. He nevertheless recovered promptly. At this time, Sept. 30th, I was called to see in consultation H. Abrahams, who had been sick for three or four days. I found him with a violent hiccough, and an irratibility of the stomach, which suffered nothing to rest upon it. In a few hours the black vomit unequivocally declared itself; he died the next day, and the body became of a deep *yellow* hue. There were two other attacks which I did not see, a day or two previous to the 30th, both of which proved fatal. On the 30th, several new cases occurred, and the number increased daily until the morning of the 9th of October, when the epidemic appeared to be suddenly arrested for a period of about sixty hours.

On the 30th September, and for some days previously, strong easterly winds prevailed, with cloudy weather throughout the twenty-four hours. From the 1st to the 5th October, the wind blew from the east and northeast, in the morning it hauled round to the south east, and near south in the course of the day and evening, gradually becoming lighter and dying away in the fore part of the night; and regularly springing up about day break, with stiff breezes from the N. E. and E.—We afterwards had light southeasterly and southerly breezes throughout the twenty-four hours, with occasional lightning and a few drops of rain about midnight, until the morning of the 9th October. At this time a stiff norther set in with drizzling rains, which lasted till the middle of the forenoon of the 11th. From the 30th September to the 9th October, the thermometer ranged at midday, in the shade, from 84 to 88 degs. On the 9th it stood at midday at 69½, on the 10th at 66½; on the 11th at 79, on the 12th at 80 degs. Within the fifteen hours immediately preceding the norther and fall of the mercury, I was called to eight new cases, and I have been informed of some others. During the prevalence of the norther, I do not believe, after careful inquiry, a single new case occurred. Subsequently the epidemic reappeared in a somewhat mitigated form—the first fresh attack occurring, I believe, about 5 P. M. on the 11th. Subsequently to this date the thermometer ranged generally from 80 to 85½ degs. at midday—descending one day as low as 70 degs. with variable winds chiefly between the N. E. and S. until the morning of the 5th November, when a

stiff norther set in which blew three days. The thermometer on the 7th, stood at 45 degs. in the morning, and 58 degs. at midday. There was on the night of the 6th and 7th a slight frost, which it is hoped has put an end to the epidemic. It may be observed here, that although the northers prevented new cases, they were believed to be pernicious to persons previously attacked.

Description of the Disease.—The fever which I am about to describe, made its appearance on the Strand. and no case has occurred in the city, except among persons living or spending much of their time on this street, or its near vicinity. Persons in every condition of health, were subject to the disease, the robust being apparently equally obnoxious to it as the feeble. The larger number of cases was of men about the middle period of life. The other sex was not exempt, and a few well marked though not severe cases occurred in young persons not arrived at puberty.

Very slight indisposition, without any particular premonitory symptoms, in most cases preceded the attack. The invasion occurred at any time of the twenty-four hours—more frequently I think between midday and dark, or between midnight and day.

The disease commences pretty uniformly with pains of the bones, a little sickness of the stomach, some fulness of the head, moderate chilliness, very seldom amounting to a complete rigor; and the slight diminution of nervous sensibility of the extremities, usually felt in the forming stage of most fevers. This state continues only a short time, from a few minutes to two or three hours, when it is succeeded by intense pain through the forehead and eyes, excruciating pains in the loins, extending sometimes down the thighs, and great restlessness. The eyes are bloodshotten, and have a peculiar shining, drunken appearance—the face is flushed and bloated—the skin hot and generally dry, sometimes moist and warm—the pulse is full, frequent, in some cases bounding, not hard—the pain of the bones and sickness of the stomach, which were present in the forming stage, continue. Sometimes there is copious vomiting within the first few hours, but as often at this period there exists only nausea or slight sickness. Sickness of the stomach is very seldom, if ever absent, but the patient does not always mention it, except when inquired of, his attention being directed to his intense suffering in the loins and forehead. The tongue is moist, rather large, moderately furred, in some cases bordered with a well defined red edge, not unfrequently of a healthy aspect. The thirst in some cases is moderate, in others considerable, seldom very intense. The epigastrium is slightly sensible on pressure, in many of the severest cases, quite indolent—the mental operations are in rare instances disturbed, very generally coherent, in some quite natural, in many sluggish, unless roused by the severity of pain. There is this noticeable in the restlessness, that it is not always accompanied with jactitation, but consists in a disposition to rise from the bed and walk about. Frequently on turning round I have found a patient sitting on the edge of the bed, who a moment before was lying quietly.

A diminution of the pains and febrile excitement very generally takes place, from eight or ten, to twenty hours after the invasion. If the disease proceed to a favourable termination, the abatement of all the symptoms continues gradually, and convalescence at length commences without any marked crisis, that I have been able to discover, except this gradual disappearance of all the morbid symptoms, and the resumption of the functions, as in health. In many cases it might be dated as early as on the third day—and in a few, perhaps even sooner—and this early convalescence has happened when the attack was ushered in with great violence. In others, convalescence commenced about the fifth or seventh day—in one case not until the fifteenth day. Convalescence may have declared itself on the intermediate days—it being difficult to determine this point precisely in the absence of a marked crisis. It was very short, recovery was prompt, and I am not aware of a single case of relapse.

When the disease proceeds to a fatal termination, the diminution of the febrile symptoms and pains goes on as described in the preceding paragraph, until about the end of the second or third day, the pulse becomes of its usual fre-

quency, the surface of its natural and pretty equally diffused temperature. In the mean time, the sickness of the stomach, which, although uniformly existing to a greater or less degree during the preceding period of excitement, was not often a subject of much complaint by the patient, is *insidiously* and gradually augmenting, until it soon amounts to uncontrollable irritability, with frequent retching and vomiting. The fluids discharged at first are watery, clear or coloured by the beverages taken. The restlessness is increased, the patient sleeps scarcely at all, or but a few minutes at a time. The tongue becomes thinner and redder at its margin—in some, however, it is quite or nearly natural—the thirst much augmented; the epigastrium becomes now somewhat tender, or exquisitely painful on pressure, particularly adjoining the right hypochondrium. As this period approaches to its close, the sympathies of the system appear to be destroyed. The pulse is slow and languid, the surface is dry and of the temperature of health, the intellectual faculties are clear; these functions give no token of the fatal state which is on the eve of being developed. A faint yellow tinge may now be discovered about the neck, on the breast, between the alæ of the nose and corners of the mouth, about the eyes and roots of the hair on the forehead; the blood-shotten appearance of the eye gives place to a faint yellow suffusion of the adnata. Slight eructations of air from the stomach take place, at first at distant intervals, and unnoticed by the patient, but soon assuming the form of a very frequent and convulsive hiccough; the black vomit speedily declares itself unequivocally; the matters vomited vary in appearance from a dull brownish translucent liquid, with a few minute flakes swimming in it, to one resembling a strong turbid decoction of coffee; the alvine dejections become dark, and resemble a mixture of thin starch and soot; the matters voided by stool, and those vomited in very malignant cases, sometimes have a very sanguinolent tint; the urinary secretion is suspended; hæmorrhages from the mouth occur; the patient makes occasional feeble efforts to vomit, many of which are abortive, others are followed by discharges of black vomit. About the time the black vomit makes its appearance, the restlessness very generally subsides. The mind, too, is singularly quiet and free from agitation, even in persons who have been apprised by their friends that death was inevitable. This state may continue from a few hours to several days; when it has been protracted, the vomiting has in a few instances ceased, and the inexperienced have indulged the delusive hope that the patient might recover, but death is sure to close the scene with coma, or a few slight convulsive spasms. Sometimes the vital cord is suddenly snapped at an early period of this stage, and death takes place with scarcely a struggle.

As dissolution approaches, the yellowness increases, and in a few hours after death becomes intense all over the surface, except where this is occupied by livid patches.

Death commonly occurs from the third to the seventh day, most frequently, I believe, on the fifth: in one case on the fourteenth. I heard of two cases which were said to have been fatal in the first twenty-four hours. I saw three cases which ran their career without any interruption from medicine or attendance *whatsoever*, in seventy-two hours very nearly.

The bowels, during the early periods of the disease, are costive, unless moved by cathartics. The first dejections are commonly feculent, in some cases coloured with bile, in others inclining to a light drab hue. When the appropriate cathartics are not exhibited, or fail to arouse the liver and other glands to healthy secretions, the stools in the course of the disease become lighter, and frequently present in colour and consistence a starchy, cream-like, or puruloid aspect. About the time the black vomit commences to be formed, the aspect of the stools is changed: they become darker as the fatal symptoms proceed, until they resemble a mixture of thin starch and soot, become sanious or sanguinolent. It is proper to state, that in many cases I have been unable to note the variations of the stools, so as to speak with sufficient precision of their prevailing character. It has occurred to me, however, to witness the black dejections near the close of fatal cases more frequently than any others.

I have several times observed a spongy state of the gums, as if ptyalism were about to commeuce, in patients who had taken no calomel.

During the latter periods of this disease, the pulse beats with its natural frequency in a remarkable manner, being, perhaps, rather more languid than in health—very seldom accelerated until the patient is moribund—when it is irregular and fluttering, not uniformly frequent.

The mind, too, preserves an undisturbed serenity, which the old stoics might have envied, while irretrievable ravages are going on in the vital organs with frightful rapidity, and life itself is on the very brink of dissolution.

The *Black Vomit*, as already stated, varies considerably in its appearance. The characteristic marks are, however, unequivocal—they are *dark flocculi*, swimming in a fluid, varying from a brownish, slate-coloured, or whey-looking liquor, to one resembling a strong decoction of coffee. In the first portions vomited, and in milder forms, the flocculi are generally few and minute. In more aggravated cases, they are very abundant, and present every variety of shape, like fine powder, stelliform, linear, or in shreds. In the most malignant cases, the black vomit approaches in appearance to dissolved blood. The flocculi subside very slowly to the bottom of the fluid, and the latter is seen to be of a light greenish or whey-coloured tinge. Sometimes, however, the flocculent portion swims on the surface, and in appearance is not unlike the inside of the dry mushroom, called puff-ball. In portions of black vomit, which had been kept a few days, the flocculi which at first had subsided, slowly arose and swam on the surface of the fluid. The common comparison of black vomit to a turbid decoction of coffee, probably conveys the best idea of its usual appearance. It is inodorous and insipid, or nearly so.

After the most careful inquiry, I am of opinion that very nearly all—as many as nine out of ten of the fatal cases, were accompanied with black vomit. In one body examined after death, which occurred on the fourteenth day after the attack, I found the stomach distended with genuine black vomit, although it was asserted that none had been ejected during life. I have also often seen its well known dark, dusty-looking stains on the bed clothes, when the attendant had not yet suspected its existence.

In the congestive fever and other climatic diseases of this country, I have never seen any thing vomited which was liable, on careful examination, to be mistaken for black vomit; although the mixture of porraceous and dull grayish matters, sometimes vomited in severe congestive fever, has been rashly pronounced black vomit by careless observers—to which, when accurately examined, it bears *very little* resemblance. I have observed a very prevalent disposition to exaggerate the colour of matters ejected from the stomach.

I have witnessed eight cases of *hæmorrhage from the mouth*—five, after black vomit had declared itself. There have also been cases of hæmorrhage from the *nose* and *bowels*.

Hiccough was a pretty frequent, though not invariable symptom of fatal cases. It was always troublesome, and has appeared to me to furnish a scarcely less unfavourable prognosis than black vomit, of which it was a frequent precursor. *Petecchiæ* and large *livid patches* have appeared in a few cases.

Picking of the bed-clothes, and a mild wandering delirium, in some cases, preceded death by many hours.

The severity of the disease is not always in proportion to the violence of the invasion—many of the severest cases having set in with mild symptoms.

The *yellow suffusion* after death was of *very uniform* occurrence, being seldom or never absent.

It is proper here to add, that there has been great uniformity in the leading symptoms of all the cases. *Pains* in the *head*, *eyes* and *loins*—the *characteristic* expression *of the eyes*—*vascular excitement and gastric irritability* in the *first* periods: augmented *gastric irritabitity*, and *black vomit* near the fatal termination, and *yellow suffusion* after death, have been more or less observable in every case. I have, therefore, regarded these as the *pathognomonic* symptoms of the disease.

Pathology.—Intending to give, among the cases, the post-mortem examina-

tions I have made, I shall omit, under the present head, unimportant details, and confine my attention chiefly to the essential pathological condition, which was identical in its nature in every case examined. What follows is the result of seven autopsies.

The *mucous coat* of the stomach is the tissue on which the disease uniformly and mainly commits its greatest ravages. Other structures experience its fury, give rise to various symptoms, and doubtless contribute to the fatal issue. The peritonæal, muscular and cellular coats of the stomach present, so far as I can determine, no pathological lesion whatever. Viewed externally, this organ is of a pretty uniform dull pearl colour, except where the trunks of the blood vessels are rendered visible by the darkish blood with which they are more or less distended. The stomach, on being opened, was in all cases found to contain a considerable quantity—from half a pint to a pint of black vomit—whether the patient had vomited for some time preceding his death or not. On pouring off the black vomit, dark-coloured flocculi—the flocculi of black vomit—are seen *adherent* to the mucous coat of the stomach, dispersed as well over its superior portions as its inferior—the body lying horizontally, and on its back—thus showing they had not subsided after death. The flocculi being detached by washing the stomach in water, the mucous membrane is found *entire*, of a dull, pearl, *whitish* colour, much *thickened* and *softened*. In two cases the softening was so great, that the villous coat could, in portions, be scraped almost into a pulp, with the finger nails. The thickening of the mucous coat is not uniform, but presents, in portions, particularly about the lesser curvature, *rugæ*, and an unequal surface, somewhat like the unevenness of the rind of a lemon—the *etat mamelonne*. No erosions or abrasions have I yet witnessed, unless I except in two cases, an *apparent* ulceration or two of the diameter of a pin's head; and a very slight abrasion in two cases of the edge of the reduplicated fold forming the border of the cardia. Neither was there any thing in the matters vomited in the most ferocious cases, which, on careful examination, could be mistaken for detached portions of the stomach. A *very few* points and small stelliform, *spattered* patches of bright red, as in common inflammation of this tissue, existed; but these points and patches of red would not, except in a single case, form a surface in their aggregate an inch square. In two of the cases examined, the whole mucous coat of the stomach presented the white, much thickened and softened condition above described; in four cases, from three-fourths to five-sixths only of the mucous coat presented this condition, commencing at the pylorus and terminating within one or two inches of the cardiac orifice—while the remaining portion surrounding the cardis, was the seat of a *most intense diffuse red injection*—preserved its *usual firmness*—was but little, if at all *thickened*, and entirely *destitute* of *flocculi* adherent to its surface. This injection does not present the pointed, stellated or spattered patches of common *active* inflammation; but the blood appears to be *diffused* throughout the mucous tissue, and the colour is more or less intense, in proportion to the quantity of blood contained in the different parts, and is of a hue between venous and arterial blood. The line of demarcation between the pale or colourless and injected portions of the mucous coat is, for the most part, as well defined by the different thickness of the two portions, as by their different colour—the white, thickened condition of the one part, the intensely engorged, red colour of the other, which still preserves its normal thickness.

I entertain no doubt that the mucous coat which is thickened and softened, with dark flocculi more or less dispersed over its surface, and destitute of blood in its texture, is in a pathological condition, more advanced than the injected portion. That the thickening and softening supervene upon, or is a sequel of the intense injection or engorgement: and of course, that a state of high sanguineous engorgement is *invariably* precedent to that in which the larger portion of the mucous coat is uniformly found after death. The disengorgement in whatsoever way effected—whether by an imperfectly performed process of secretion, as appears not improbable, or whether the blood is effused pure and undergoes some change by admixture with the fluids of the stomach—forms the

black vomit, or furnishes the material for it, and leaves the mucous tissue bloodless, colourless, thickened, more or less softened and unfit for the purposes of life.

If it be borne in mind that the colourless portion of the mucous tissue is softened and thickened, that the injected portion is not, and that these pathological lesions do not promptly disappear; that a careful examination shows the flocculi which are dispersed on the colourless mucous tissue to be closely adherent, as if formed there, while the injected portion is not only destitute of a single flake, but that none will adhere to this portion; that the colourless condition of at least a large extent of the mucous tissue, was an invariable concomitant of black vomit, while the injected condition was wanting in three cases, we can feel no doubt of the order in which these lesions succeed each other.

What I wish particularly to insist on, and what appears to me to be amply borne out by the examinations I have made, is that the essential pathological conditions of the stomach in fatal cases of the present epidemic, so far as these conditions are cognisable by our senses, are, first, a state of high sanguineous engorgement of the mucous membrane of this organ, which engorgement is relieved by the formation of the black vomit—a process fatal to the vital uses of this tissue, and, of course, fatal to life, where a large portion of it is involved. The engorgement is not a condition similar to gastritis—at least to its *common* forms. It does not give rise to the same aggregate of symptoms—it does not present essentially the same pathological appearance—its terminations are altogether unlike.

At what period of the disease the engorgement takes place I am unable to say with precision. In cases which convalesce rapidly, I believe it does not take place at all. In other cases I believe it seldom occurs to any considerable extent, until the close of the period of excitement. And I have been disposed from the most careful appreciation of symptoms to regard the augmented or renewed gastric irritability occurring at this time, or at a subsequent period, as the first symptom of the commencement of serious engorgement. And in the treatment it will be found a very important indication to prevent any torpor of the cutaneous vessels, or reflux of the blood from the surface upon the internal organs. What is the condition of the mucous tissue or of the gastric nerves, which invites so singularly in this disease to engorgement, I am wholly unable to conjecture.

In one case the stomach presented numerous bright red points and extensive red spattered patches as in the more common forms of active inflammation of this tissue; and they were chiefly abundant about the cul-de sac of the stomach. The mucous membrane generally was thickened, softened, and in the colourless, disengorged state hitherto described. The appearances in this case were interesting by comparison with the *diffuse* redness seen about the cardiac orifice in other cases.

I deem it almost unnecessary to say that the examinations were conducted with great care, and the existence of the injection in the texture of the mucous coat and not in the subjacent tissues accurately observed.

Intestinal Canal.—Viewed externally, large portions of this canal are of a deep dark colour—not gangrenous. This colour is owing in some degree to that of the contents, but the intestinal tube itself is pretty permanently imbued with a dark brown colour which does not wholly disappear on washing. There is usually moderate congestion of the blood vessels. In some cases, sections of the intestines are pale and much contracted. The external coats of the canal are healthy. We find more or less dark matters throughout the tract—those of the duodenum are sometimes mingled with black vomit, which has passed the pylorus, perhaps after death:—lower down, they are black as tar and gelatinous, sanguinolent near the ileo-cœcal valve in one case—in the contracted portions, moderate in quantity, pasty, and colourless. The intestinal mucous membrane is smeared with a starchy material more or less glutinous in different parts; and pathological lesions sometimes are found in the *duodenal* and *ileo-cæcal* portions. The glands of Brunner and Peyer are sometimes greatly developed, at other

times apparently healthy. There was no obvious and uniform pathological condition apparent to me in this membrane—it was neither thickened nor softened in any noticeable degree. The upper portions of the tube were more commonly distended, the lower portions contracted. Not a particle of bile was ever found in the intestinal canal. Whether this deficiency will explain most of the morbid appearances, I am unable to determine. The absence of bile in the alimentary canal is by no means of unfrequent occurrence in the febrile diseases of this climate; and whenever this condition exists, it very uniformly occasions *black stools*, sometimes viscid and sometimes watery. I have often seen stools *as black as tar wholly* and almost *instantaneously* checked by a single discharge of *bile*, and the stools forthwith become healthy. While on this subject it may not be amiss to mention that dark, tarry stools are often supposed to be, and described as vitiated *bile*, when they do not contain a particle of bile. The morbid appearances of the intestinal tube were much less severe than those of the stomach, as well as widely different.

The Liver—was found in all cases of its usual dimensions, of ordinary firmness, and without any obvious *structural* derangement. In three cases it was of a very light drab colour externally and internally, and destitute of blood—in one of a dark claret colour and congested with blood—in the others, of its usual appearance and containing a moderate quantity of blood. In all cases there appeared to be a suspension of the biliary secretion; no bile could be squeezed from the substance of the liver. The bile in the gall bladder was deficient in quantity—in some, dark and very tenacious, in others yellow and thin—in only one case was the gall bladder distended. The mucous lining of the gall bladder was in one case *intensely* inflamed. It is scarcely necessary here to contradict the popular error, that black vomit is a vitiated product of this organ, for nothing of this nature was discovered in any part of its substance, nor in the ducts leading to the alimentary canal. On the contrary the *ductus communis choledochus* as in the case of Robinson, contained a little yellow bile, while the stomach was full of turbid black vomit of the deepest dye.

The *yellow suffusion* of the surface is properly considered among the *post mortem* appearances. That there is a total want of the biliary secretion during the latter periods of this disease is an unquestionable fact. There is no bile contained in the stools that can be discovered, none is found after death in the alimentary canal, in the substance of the liver, and but a very small, less than the usual quantity in the gall bladder. Where is it? At what time this suspension of hepatic action takes place, I am unable to say with precision. From observation of the symptoms, I believe it occurs as early as engorgement of the stomach commences, and is perhaps synchronous with this event. Slight yellow suffusion of portions of the superior parts of the body occurs as has been described, about the time that other symptoms lead us strongly to suspect the commencement of engorgement. The intense yellow colour after death depends on the colouring matter of the bile which has been deposited by the blood. Whether there has been a reabsorption of the biliary secretion, or whether the elements have never been eliminated, is immaterial to the appearance now under consideration. During life, the yellow colour is in some degree veiled by the red colouring matter of the blood; on the separation of this fluid after death, the serous or coagulable portions are of a yellow hue; the red globules produce the livid patches. Wherever in the present disease I have found serum after death, as in the pericardium, it has been *invariably* of the hue of the surface.

The Bladder of Urine was in some contracted, in others distended, and presented nothing worthy of particular notice, except in a single case—that of Forsyth—to which reference may be made for the facts. The *kidneys* when examined offered nothing worthy of note.

The *pancreas* was generally firm and dry. The *spleen* natural.

The *thoracic viscera* are sound. A few drachms of yellow serum are commonly found in the pericardium; and, in one case, a large false polypus of a bright yellow hue in the left ventricle. The *heart* usually contains a moderate quantity of darkish blood. The blood is healthy, neither putrid nor dissolved.

The *brain* and *spinal marrow* were not examined.

According to the pathological conditions above described, it appears that two important organs have *invariably* suffered—the *stomach* and *liver*. The *mucous coat* of the former organ *always* has presented *severe structural* derangements:—a condition which I am strongly disposed to regard as the proximate cause of the death of the individual, the *mortis ratio sufficiens*. The latter organ, the *liver*, has with *equal uniformity* exhibited undoubted evidences of severe *functional* derangement; or, accurately speaking, a *total suspension* of its function of *biliary secretion*. How intimately these two conditions are associated—what relation they bear to each other in the chain of cause and effect, or whether they are independent effects of some common cause, I cannot determine. From the suspension of the urinary secretion, which very uniformly occurs without appreciable lesions of the kidneys during the last period of the disease; and from the occasional pathological lesions of the mucous lining of the gall bladder and of the urinary bladder, &c., it would appear that most, perhaps all the glandular and mucous tissues respectively of the abdomen, are prone to be in some degree similarly affected in this disease.

The obstacles to extensive dissections in private practice, rendered it impracticable to make examinations of the brain and spinal marrow—as was desirable; although the symptoms would I think justify the doubt, whether any *peculiar*, *appreciable* lesion of the nervous system existed.

The *blood* drawn during the stage of excitement appeared to me not to vary from a healthy condition. It *coagulated with moderate firmness*, *without inflammatory buff*, or *tendency to putrescence*. Nor were there any symptoms or appearances which I regard as showing any defect in its decarbonization by the lungs.

[The preceding interesting article is extracted from a memoir entitled, "An Account of the Yellow Fever which appeared at Galveston, Republic of Texas, in the Autumn of 1839, with Cases and Dissections. By Ashbel Smith, Ex-Surgeon General of the Texian Army." We have been favoured by the author with a portion of this memoir, (all that was in type when he wrote to us,) and as the pathology of yellow fever is now undergoing discussion and exciting much interest, we have inserted such parts as are calculated to throw light upon that point. When the concluding portion reaches us we shall review the work.]

Operation for Remedying an Anchylosis of the Hip-Joint.—Dr. J. Kearney Rodgers furnishes in the *New York Journ. of Med. and Surg* (Jan., 1840,) the following particulars of an interesting operation which he performed some years ago, to remedy an anchylosis of the hip-joint. "It was similar in some respects," Dr. R. observes, "to the one performed by my friend Dr. Rhea Barton, of Philadelphia, in Nov. 1826, and was suggested by the account given by him in the *North Am. Med. and Surg. Journ.* for 1827.

"I am desirous of placing it on record, that the Profession may be in possession of all the operations of the kind, with their results; and, also, for the purpose of correcting the impression made by some inaccurate public notices of it. Velpeau in his work on Surgery speaks of it, on the authority of an American physician, as fatal; and I also see it alluded to in the *English Cyclopedia of Pract. Surg.* as followed by the same result.

"James Hall, an Irish labourer, aged 47 years, of healthy constitution, in October, 1829, suffered a severe injury by being caught between a vessel and the wharf.

"By this accident, the left thigh was fractured about its middle; and the right hip-joint severely contused. For the treatment of those injuries he was placed on his back, Boyer's apparatus applied to the left thigh, and the right thigh flexed, rotated outwards and abducted. The apparatus being badly adjusted, sloughing took place in the left groin, and all dressings were removed. No extension was kept up from this time, and the os femoris united two inches shorter than the right. The inflammation of the hip-joint proved very severe, and terminated in complete bony anchylosis.

"He was admitted under my care into the New York Hospital, November 10th, 1830. At this time, he could indeed walk, but with a painful effort, and the knees, in the act of progression, were separated two feet and a half. He was unable to support his family, and was desirous of having the deformity remedied. His general health was good.

"In consultation with my colleagues, Drs. Mott, Stevens, and Cheesman, I proposed to cut down on the os femoris, saw it off immediately above the less trochanter, and, as this limb was two inches longer than the other, to remove as much as possible of the bone between the trochanter and the head, so as to make the two limbs, as nearly as I could, of the same length, This plan was assented to, and on the 24th of November, 1830, at 12 o'clock, the operation was performed in the following manner. An incision was made, six inches in length, in the course of the os femoris, beginning about an inch above the trochanter major. This was met about its middle by another from the front, three inches in length. The flaps were turned off, and the soft parts easily detached from the bone, so that in a short time, and with much less difficulty than I anticipated, my fingers were passed round the bone immediately above the trochanter minor. The division of the bone was attempted by the chain saw, but the instrument breaking, the section was completed with a saw recommended by Dr. Barton, (*North Am. Med. and Surg. Jour.* for 1827, p. 292.) This being accomplished, the limb was readily placed parallel with its fellow. Another section was made, and a wedge-shaped portion removed, the thickness of which at the outer part was about half an inch, and at the less trochanter, three-quarters of an inch. The removing a portion of bone of this shape, I thought would enable me to keep the limb which had been greatly abducted, more readily in situ.

"The wound was dressed with adhesive plaster and lint, and a bandage applied.

"The patient was now removed to his ward, and placed on a firm mattrass. The limb was kept in a proper position by a bandage to the feet.

"*Eight*, P. M.—Pulse 110. Temperature of skin rather higher than natural; pain in wound not very severe; complains of bandage being tight. It was cut, and an anodyne administered.

"25*th*.—Rested tolerably well; skin somewhat heated; wound swollen and hot, but pain not violent; pulse 114. To take spt. Mind. and apply warm laudanum and water to the wound.

"26*th*.—Slept only an hour and a half; skin cool; pulse 117. Sickened by spt. Mind. Pain in region of the stomach, and rejects his gruel and arrow root. Slight oozing of dark blood from the wound. Ordered fomentations to the epigastrium, lemonade as a drink, and to take at bedtime solut. morph, gt. xxxv.

"27*th*.—Slept better; skin natural; pain of stomach removed; pulse 120. Is cheerful. Skin inflamed in the anterior part of the wound. Continue the opiate wash.

"28*th*, 10, A. M.—Slept soundly, and feels much refreshed. Pulse 103.

"*Eight*, P. M.—Pulse 98. Is perspiring freely. Inflammation of skin subsided; dressings removed; wound almost united.

"29*th*.—Slept well; pulse 92, full and soft. No evacuation from his bowels since the operation, and I was unwilling to disturb the bones by moving him. Common enema to be administered. To take chicken water. Wound rather flabby. To be dressed with Ung. Bals. Peru.

"For some days he improved in every respect.

"*Dec.* 5*th*.—On passing the finger into the wound, the bones could readily be felt in a proper situation.

"*Dec.* 10*th*.—Passed a restless night. Bowels loose. Tongue dry and slightly brown; stomach rejects his drinks and food.

"To take the effervescing draught, and have an injection of starch and laudanum.

"This attack soon passed off, and in six weeks from the operation the wound was nearly healed. Passive motion was now commenced and kept up daily.

"About the 1st of March, the wound healed, and he was supported on crutches. He remained in the Hospital until the beginning of May, 1831, when he left it of his own accord.

"*May*, 1833.—My patient paid me a visit, walking well, and assisted only by a cane. He assured me that he could walk well enough if the left thigh gave him as little inconvenience as the one on which I had operated. But the left knee was somewhat stiff, as was the thigh, in consequence of the scars produced by the sloughs in the groin.

"He can rotate the right limb inward and outward; abduct it, and flex it nearly to a right angle. Thus far the success of the operation was perfect and I intended to keep my eye upon him, and examine the joint from time to time; but I never saw him afterward. I was the more anxious to follow up the case, because, after two or three years, Dr. Barton's patient lost the mobility of his joint.

Sensitive Tumours of the Female Urethra.—This is a most troublesome affection, at least so it has proved in the few cases that have come under our observation. The following case, related by Dr. A. E. Hosack, in the *New York Journal of Medicine and Surgery*, (July, 1839,) is worthy of attention from the success which attended the treatment.

"In May, 1835, I was consulted," says Dr. H., "by a servant woman in a family where I was in attendance, for a complaint which she said had caused her considerable distress, and, as she expressed herself, it appeared as if something had dropped into the passage immediately after making water, causing her great pain at the moment, and which frequently bled, particularly upon being touched by her linen. Upon the slightest exertion she was seized with bearing-down pains, to such a degree as to compel her to take her bed. These difficulties, she said, had been gradually increasing upon her for two or three years, and being unmarried, she was from delicacy induced to conceal her sufferings, until no longer able to bear them.

"From this statement I was induced to make an examination, which clearly explained the cause of all her trouble. I discovered two or three little tumours immediately within the meatus urinarius, to which they were attached by a narrow neck. They were of a florid red colour, and appeared to be covered by the delicate lining membrane of the urethra. They were exquisitely sensitive, and bled upon the slightest touch. In form they resembled a split pea, varying from that in size to a small kidney bean, and placed upright in such a manner as to break the flow of urine. The patient did not, however, complain of the pain upon urinating as her greatest distress, for it was not to be compared to that caused by exertion, or from contact of the dress, which was frequently excruciating.

"By raising these tumours with a probe, I discovered their attachment to be limited to the margin of the urethra, and suggested to her the propriety of having them removed, which I assured her could be readily done, and with comparatively little pain. Having obtained her consent, I snipped them off with scissors; the hemorrhage was not excessive. In a few days the part was healed, and she appeared to be completely rid of the evil, until about six weeks after, when the sensitiveness and other symptoms returned. In the course of three months I was again requested to relieve her, if possible, by a further operation. Upon examination, I found the margin of the urethra fringed with the same highly organized structure. It appeared as if the lining membrane had been prolapsed and was turgid with blood; or, in other words, had shot out like a fungus. Under these circumstances I determined to remove the diseased structure by excising the meatus urinarius, and this was accordingly done. The wound in due time was healed, leaving the parts apparently sound, with the exception of a few spots of discoloration in the folds of the nymphæ, which I afterwards destroyed by caustic.

"The extremity of the urethra remaining somewhat harder than might have been expected in sound parts, I expressed doubt whether it might not be the

incipient stage of scirrhus. The disease, however, in the course of a few months returned with all the distressing symptoms as before enumerated. The patient being again willing to submit to any operation that I might advise, I determined to remove the urethra to an extent that would hold out a better prospect of success. My friend, Dr. Wilkes, with whom I consulted, confirmed this opinion, and assisted me in the operation.

"The patient being placed upon the bed in a recumbent position, with the legs flexed upon the body, I began with measuring the length of the urethra, by introducing the female catheter and marking it the instant the urine began to flow; this precaution I considered necessary, from the fact that the length of the urethra, in females, is very variable; at the same time, I was unwilling to encroach too much upon the bladder, which might endanger consequences more distressing to the individual than the existing disease.

"The preliminaries being attended to, I seized the fungous excrescence with the *pince* of *Museux*, and drawing it out, I circumscribed the urethra with a knife, carried on the dissection until I had detached about three-quarters of an inch in extent, as I supposed. I then examined the urethra at the upper extremity of the wound, and finding it perfectly natural and free from all hardness, I separated it at that point. The hemorrhage, for the moment, was very great; but by pressure, constantly kept up with a compressed sponge, it was arrested, or so much restrained as to do away with all anxiety on that account.

"The patient having made water a short time previous to the operation, I did not consider it necessary to leave a catheter in the bladder, which I afterwards regretted, as I was obliged to draw off the urine the following morning, but not without considerable difficulty, as may be imagined. I determined, however, for the future, to leave the catheter in the bladder, or at least until the urine should flow at its side; which took place on the sixth day, when I removed the instrument. Since which time, she has enjoyed full control over that organ, and voids urine with comparative ease.

"It is now six months, and no return of the disease. No bougie was introduced to keep open the mouth of the urethra, as might, *a priori*, have been considered necessary. Indeed, I purposely avoided using it, lest the irritation might predispose the parts to a return of the disease. Upon examining the part removed, I found the urethra to be very much thickened and hardened at its extremity; but this circumstance not being observed in other instances of this disease as related by different authors, I must conclude that it had no agency in the growth of these tumours, but was probably the result of irritation.

"I first met with this disease in the practice of my friend, Dr. Mott, who, several years ago, was consulted by a gentleman on account of his daughter, who laboured under this distressing complaint. The case was one of great interest, both from the circumstance of the patient being at the delicate age of eighteen, and on the eve of marriage. She had suffered from this disease for two years and upwards, and considering it an insurmountable objection to marrying, had frequently deferred the nuptial ceremonies, at the same time not willing to break off her engagement, and unable any longer to conceal her actual situation, she disclosed the true cause to her father, the only surviving parent, who immediately came to New York, and placed her under the care of Dr. Mott.

"In this case, Dr. Mott, after carefully examining the disease, determined upon removing the *meatus urinarius*, to the margin of which two or three small flattened and vascular tumours were attached. They were of the size of small beans, highly florid, and exquisitely sensitive. The wound healed kindly after the operation; the result was perfectly successful, when she returned home to her friends, and afterwards married."

Club-foot and some analogous Diseases.—The Number of the *New York Journal of Medicine and Surgery* for January, 1840, contains an elaborate and valuable essay on club-foot and some analogous diseases, by Dr. William Detmold, of New York. Dr. D. has had a larger experience in the treatment of these deformities than any other surgeon in this country; and he has contributed in no small

degree, by his paper published in the Number of this Journal for May, 1838, and his numerous operations, to introduce and establish the Stromeyerian method of treating them. We shall notice this last essay of Dr. D. more particularly hereafter; we have only space at present for the following summary of his cases:—

"Of the 167 patients with distorted feet, which we have examined and treated within the last two years, and from the observation of which the foregoing facts are derived, 98 were males and 69 females—38 were within their first year, 62 between the first and third, 31 between three and twelve, 27 between 12 and 25, and nine between 25 and 50.

"125 were born with the deformity; seven of these squinted at the same time. In 42 it originated after birth; in nine of these it was connected with an evident affection of the spine. In 19 cases there was an hereditary predisposition; (in 18, members of the father's family—and in one, of the mother's, having a similar defect.) In six families, several children had the same deformity.

"In 93 both feet were affected, in 41 the right alone, in 33 the left, (aggregate 260.) 230 were T. varus, 11 T. valgus, 17 T. equinus, 2 T. calcaneus.

"Treated without division of tendons, 2 T. calcaneus, 11 T. valgus, 45 T. varus. The oldest patient treated without an operation was fifteen years old; 13 between one and four; the rest less than a year old. The youngest patient in which we have divided the tendo-Achillis, was three months old.

"In 163 we divided the tendo-Achillis alone; in 17 we divided other tendons also, and the aponeurosis plantaris. In three cases we have divided the tendo-Achillis twice.

"In many cases where the deformity was developing itself after birth, it only required the application of a suitable shoe to remedy it, and make the patient at once walk straight. In cases where the deformity had reached a higher degree, and where we had to divide tendons, the shortest period in which the patient could walk well was eight days; the longest ten months. But amongst this whole number which we have treated within these two years, there are hardly fifty who, with our consent, have left off all support; the rest still use it. For the result of many cases we cannot answer, as in many instances the children were brought, perhaps only once or twice, to our office, and a shoe provided for them, and we never saw them afterwards.

"We have in other contractions divided one sterno-cleido-mastoideus, one biceps brachii, one flexor carpi radialis, one flexor carpi ulnaris, one palmaris longus, one flexor digitorum manus sublimis, four flexor tendons of separate fingers, one pectineus, six biceps femoris, seven semimembranosus and semitendinosus, five extensor tendons of separate toes, three flexor tendons of separate toes; besides a number of times, different portions of fasciæ and aponeuroses.

"In every one of these cases the external wounds healed by the first intention, and only in one case, after the division of the m. flexor digitorum manus, we saw inflammation and an abscess."

We must not omit to notice the very handsome manner in which Dr. D. yields his claim to being the first surgeon in this country, to perform the Stromeyerian operation.

"In the beginning of September, 1837," he remarks, "I performed the operation in New York, and repeated it several times soon after; and in the Number of the *American Journal of the Medical Sciences* for May, 1838, I published a report of several successful cases. As no notice had appeared before that time, in any publication, of this operation having been performed in America, I was induced to believe that I had been the first surgeon who had performed it on this side of the Atlantic; and, indeed, for a short time I enjoyed the credit of it, until soon after Dr. Dickson, of North Carolina, and Dr. Smith, of Baltimore, claimed the priority. As the medical periodicals of this country had given me the credit of its introduction here, Dr. Stromeyer was misled to believe it, and I herewith make to those gentlemen an apology for my friend, for saying in his work on club-foot, 'Dr. Detmold, late surgeon of the royal Hanoverian army, commenced his practice in New York, with a series of successful divisions of the tendo-

Achillis. The enterprising surgeons of America had, until then, not undertaken this operation, although my essays in Rust's Journal had been translated in the American medical periodicals.' But although I have thus no claim to the priority—Dr. Dickson having operated once in 1835, two years before me, and Dr. Smith in 1836—yet, as neither of these gentlemen, nor any other surgeon in this country, had reported any cases of the operation before I began, and as since the publication of my report, several hundred cases (of which number, however, I claim the greater part myself), have been operated upon in the different cities of the United States—I say, from these circumstances, I am inclined to believe that I have done something for the introduction and establishment of this operation in this part of the world."

This statement is in the highest degree creditable to Dr. D., and in our view does him more honour than he would derive from even the invention of the operation.

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Vermont Academy of Medicine.—This institution has been resuscitated. The following compose the faculty:—Horace Green, M. D., Theory and Practice of Medicine; Robert Nelson, M. D., General and Special Anatomy and Physiology; James Hadley, M. D., Chemistry and Pharmacy; James Bryan, M. D., Principles and Practice of Surgery; Joseph Perkins, M. D., Materia Medica and Obstetrics; Ralph Gowdey, M. D., Medical Jurisprudence. The course of instruction will consist of a lecture term and reading term. The public lectures will commence on the second Tuesday in March, and continue thirteen weeks. Fee to the whole course $50; matriculation $5. The reading term is to be conducted by Drs. Perkins and Jamieson, and will commence on the 15th June and continue until the first of March. Fee for the whole term $36.

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Wills' Hospital for persons affected with Diseases of the Eyes and Lameness.—The surgeons of this institution have determined to render it available for clinical instruction. Dr. Isaac Parrish commenced, on the first of January, a course of clinical instruction, and it will be continued during the months of April, May and June by Dr. Fox; July, August and September by Dr. Littel; and October, November and December by the editor of this Journal.

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Dr. Thomas Cooper's Works.—We learn that the memoirs and writings of the late Dr. Thomas Cooper, are preparing for publication by his son-in-law, Dr. John Manners, of New Jersey.

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Introductory Lectures.—We have a number of these on our table, some of which we may notice particularly hereafter; but in justice must state now, that they are all creditable productions, and, as a whole, manifest a decided improvement over those of previous years.

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